

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-014873**Date Inspected:** 12-Jun-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 Inspectors: Mr. Liu Hua Jie, Mr. Li 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. Wang Fu Peng, stencil 205718 is using shielded metal arc process to perform weld repairs of visual and magnetic particle rejections on various side plate and bottom plate stiffener hold back welds on both sides of the weld joints between OBG segments 8BW and 8CW. This QA Inspector measured a welding current of approximately 150 amps and Mr. Wang Fu Peng appears to be certified to make these welds. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container. Items observed on this date appear to comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Liu Houkuan, stencil 045133 is using shielded metal arc process to perform weld repairs of visual and magnetic particle rejections on various side plate and bottom plate stiffener hold back welds on both sides of the weld joint between OBG segments 8CW and 9AW. This QA Inspector observed that Mr. Liu Houkuan appears to be certified to make these welds. Items observed on this date appear to

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comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Bin, stencil 048696 is using flux cored welding process to make a groove weld on the traveler rail bracket that is to be installed near OBG segment 8CW panel point 67.

This QA Inspector observed the base material appears to have been preheated prior to welding and measuring a welding current of approximately 305 amps and 33.0 volts. Shortly after this measurement was taken Mr. Wang Bin stopped welding and disconnected his welding machine. Mr. Li Yuan Zheng appears to be certified to make this weld. ZPMC CWI Mr. Liu Hua Jie had previously informed this QA Inspector that no ZPMC welders were working around the exterior of OBG segments 8W. This QA Inspector later observed Mr. Liu Hua Jie monitoring welding at OBG segment 7DW and Mr. Liu Hua Jie informed this QA Inspector that he had not been aware that anyone would be welding on traveler rail brackets. Items observed on this date do not fully appear to comply with applicable contract documents.

OBG Segments located in the yard behind bay 14

This QA Inspector observed ZPMC welder Mr. Yu Hui Ye, stencil 045143 is using flux cored welding procedure WPS-B-T-2133 to make OBG segment 7DW weld SSD25-PP057-127. This QA Inspector measured a welding current of approximately 230 amps and 24.8 volts. This QA Inspector observed that Mr. Yu Hui Ye appears to be certified to make this weld and the base material was preheated with a torch prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Bi Laishu, stencil 045280 is using flux cored welding procedure WPS-B-T-2132 to make OBG segment 7DW weld SSD25-PP057-103. This QA Inspector measured a welding current of approximately 310 amps and 30.0 volts and the base material was preheated with a torch prior to welding. This QA Inspector observed that Mr. Bi Laishu appears 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. Cao Xinglong, stencil 069683 is using shielded metal arc welding procedure WPS-B-P-2214-TC-U4b-FCM-1 to make OBG segment 7DW weld SSD25-PP057-223. This QA Inspector measured a welding current of approximately 165 amps and the base material was preheated with a torch prior to welding. This QA Inspector observed that Mr. Cao Xinglong appears 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. Ji Yi, stencil 045268 is using shielded metal arc process to perform tack welding of temporary alignment plates between the deck plate and segment 7BW counterweight corner assembly. This QA Inspector observed Mr. Ji Yi appears to be certified to make these welds. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container and two torches are available to preheat the base material prior to welding. Items observed on this date appeared to comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jiang Shizhen, stencil 48694 is using shielded metal arc process to make tack welds between drip plates and the top deck plate on OBG segment 11DW near panel point PP106. This QA Inspector initially observed this welding from approximately 50 meters away from the OBG segment and when this QA Inspector climbed to the top deck approximately two minutes later this QA Inspector observed the

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base material adjacent to where the most recent tack weld had been made appears to be at an ambient temperature. No other welding appears to be taking place near this OBG segment and no ZPMC QC personnel were observed in the area. This QA Inspector observed Mr. Jiang Shizhen appears to be certified to make this weld. Mr. Jiang Shizhen observed this QA Inspector measuring the base material temperature and Mr. Jiang Shizhen stopped additional welding and he removed his welding equipment from OBG segment 11DW the top deck plate. Items observed on this date do not fully appear to comply with applicable contract documents. See the photograph below for additional information.

OBG Bay 16

This QA Inspector observed ZPMC welder Ms. Wang Lanying, stencil 045265 is using submerged arc welding procedure WPS-B-T-2221-B-U3C-S-2 to make OBG segment 13AW weld BP3374-001-003. This QA Inspector observed a welding current of approximately 650 amps and 33.5 volts and Ms. Wang Lanying appears to be certified to make this weld. The weld document requires the 100 mm thick base material be preheated to a minimum of 110 degrees Celsius prior to welding and this QA Inspector measured the adjacent base material to have a temperature of approximately 65 degrees Celsius temperature. This QA Inspector informed ZPMC QC Inspector (not a CWI) Mr. Li Jie that the base material temperature is approximately 45 degrees Celsius below the minimum required base material temperature. QC Inspector Mr. Li Jie informed this QA Inspector that the base material temperature had previously been at a temperature of approximately 200 degrees Celsius and that they had turned off the electrical power to the electric heating elements to prevent the base material from getting overheated.

This QA Inspector asked QC Inspector Mr. Li Jie to ask CWI Mr. Xu Tao to come to this location in OBG bay 16.

When Mr. Xu Tao arrived in OBG bay 16 this QA Inspector informed him that this QA Inspector observed that submerged arc welding appears to have been made on base material that was approximately 45 degrees Celsius below the minimum required base material temperature. Mr. Xu Tao said that ZPMC will energize on the electrical heating elements underneath the weld in order to heat the weld to a minimum of 110 degrees Celsius prior to additional welding. Items observed on this date do not fully appear to comply with applicable contract documents. See the photograph below for additional information.



Summary of Conversations:

See Above.

Comments

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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
