

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-007368**Date Inspected:** 31-May-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 and Tower Fabrication**Summary of Items Observed:**

CWI Inspector: Mr. Wu Zhi Feng

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. The QA Inspector observed the following:

OBG Bay 6

The QA Inspector observed ZPMC welder Mr. Li Xue Hua, stencil 058178 is using flux cored welding procedure WPSB-T-2231-B-U2-F to make cross brace weld CB202C-008-003. The QA Inspector observed a welding current of approximately 300 amps, 29.5 volts and QC personnel were monitoring this welding. The QA Inspector confirmed the base material has been preheated with a torch to a minimum temperature of 60 degrees Celsius. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Bay 7

The QA Inspector observed ZPMC welder Mr. He Yumei, stencil 048625 is using flux cored welding procedure WPSB-T-2231-B-U2-F to make side plate stiffener splice weld SP048-001-081. The QA Inspector observed a welding current of approximately 305 amps, 30.2 volts and QC personnel were monitoring this welding. The QA Inspector confirmed the base material has been preheated with a torch prior to commencement of welding. Items

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observed on this date appeared to generally comply with applicable contract documents.

OBG Trial Assembly Yard

The QA Inspector observed ZPMC has performed air carbon arc gouging of segment SEG-019D welds SEG019D-020, -021 -029, -030, -038, -039, -047, -048, -056 and -057 for a length of approximately 600 mm adjacent to where cross beam CB3 attaches to OBG segment 4W. The QA Inspector observed ZPMC welders had made one pass of shielded metal arc weld material directly over the air carbon arc oxide surface without grinding the weld groove to a bright metal condition as required by AWS D1.5 Welding Code. The QA Inspector issued an incident report to document this Code violation. See below for additional information.

In order to inform dayshift Caltrans QA Inspectors of the ongoing activities the following turnover was made by this QA Inspector:

Around 2000 hours ZPMC utilized three synchronized heavy haulers to move OBG Lift 4 (4AE and 4BE) to half way between the main line of OBG segments and Tower Bay 11. Lift 4 East is now sitting on metal stands. The move appeared to progress smoothly with only minor scraping being noted.

Caltrans QA Inspectors Mr. George Goulet, Mr. Larry Viars and this QA Inspector Mr. Paul Dawson performed random visual inspections of the holdback and adjacent welds on the accessible ends of the ribs on the east end of 4AE and the west end of 4BE. We observed and identified with a yellow marker several locations where there is porosity, weld overlap, and rough weld surfaces. One stiffener web on 4BE has a bow of approximately 3 mm. The areas we can easily see now had previously been difficult to see and weld when the segments were in close proximity with adjacent segments. It appears ZPMC is proceeding to sandblast off the yellow markings and intends to apply paint to the holdback welds on both accessible ends. Below are photographs of some of the problem areas that we observed.

ZPMC personnel are using electric sanding machines to reduce the thickness and smooth the paint on the bottom and side surfaces of segment 4AE and 4BE.

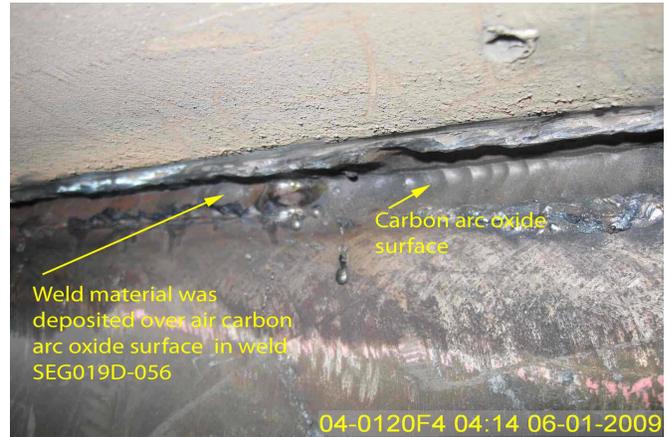
Torquing of bolts is being performed by ZPMC workers of the top deck U rib splice connection plates between 4AE and 4BE. ZPMC is using a calibrated wrench and they have marked the nuts/washers with 'turn of the nut' orientation lines. The final torque of 20 of the 78 closed rib connections has been completed using turn of the nut. Locations completed so far are between #59 and #78 with one bolt being short. (QC said it will be fixed later). ZPMC is 25% complete with the torquing of the top plate and none of the other (side plate etc.) connections have been torqued.

ZPMC has removed the welds on five stiffeners where Cross Beam 3 stiffeners weld to the exterior of 4AW (vertical) and for a distance of 300 mm (horizontal) along the stiffener to top deck weld. It is not known by this QA Inspector if Caltrans Engineering had been informed that these welds are going to be removed. These gouged areas have not been ground and ZPMC had two welders with three full containers of electrodes wanting to weld. The QA Inspector informed ZPMC QC Mr. Zhang Zheng Mao and ABF Mr. He Yong of the air carbon gouge oxide surfaces and they both said they will ensure the weld groove oxide surfaces are ground prior to welding. The QA Inspector was informed this will take place the first thing tomorrow (Monday) morning. Followup visual inspections reveal that ZPMC had started to weld a stiffener identified as SEG019D-056 prior to removal of the air carbon arc oxide surface and an Incident report has been issued to document this Code violation. See the

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photographs below for additional information.



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
