

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-003503**Date Inspected:** 09-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2130**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:**

Caltrans 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:

Orthotropic Box Girder (OBG) Fabrication:

QA Inspector Mr. Sun Wei

Bay 1

The QA Inspector monitored welding of closed rib Production Monitoring Test (PMT) representing deck plates DP494-001 and DP359-001 which were welded today starting at approximately 0100 hours using gantry #2. The QA Inspector observed six ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-3 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 flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 520 mm per hour for the root passes and 680 mm for the cover passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Ms. Zhang Li Ping, stencil 218040 completed the root pass of weld #1 with a welding current of approximately 380 amps and 30.3 volts and the cover pass welding current of

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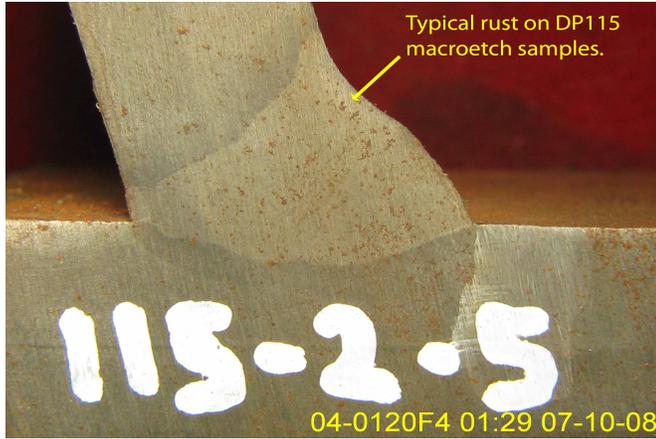
approximately 670 amps and 24.5 volts. Welder Mr. Zhao Cheng Shuang, stencil 59400 completed the root pass of weld #2 with a welding current of approximately 370 amps and 30.0 volts and the cover pass welding current of approximately 680 amps and 25.0 volts. Welder Mr. Xu Guo Yin, stencil 59443 completed the root pass of weld #3 with a welding current of approximately 360 amps and 30.5 volts and the cover pass welding current of approximately 680 amps and 25.0 volts. Welder Mr. Tiang Shuang Chen, stencil 201788 completed the root pass of weld #4 with a welding current of approximately 370 amps and 30.0 volts and the cover pass welding current of approximately 680 amps and 25.0 volts. Welder Ms. Wang Xiao Zong, stencil 59445 completed the root pass of weld #5 with a welding current of approximately 360 amps and 30.0 volts and the cover pass welding current of approximately 690 amps and 24.8 volts. Welder Ms. Song Yun Shu, stencil 59421 completed the root pass of weld #6 with a welding current of approximately 360 amps and 30.0 volts and the cover pass welding current of approximately 675 amps and 25.0 volts. The QA Inspector performed random visual inspection of the root pass and cover passes and items observed appear to comply with project specifications. Following completion of the welding ZPMC QC CWI Inspector Mr. Sun Wei marked a 500 mm length of the welds as being the areas that are to be representative of this PMT test. The QA Inspector observed ZPMC NDE inspector Mr. Xue Hai Rong performing ultrasonic of each of the six welds in the areas where Mr. Wei had marked for PMT testing. Following Mr. Rong'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 Wei and ABF representative Ms. Lu Yun both visually inspected these macroetch samples and documented their acceptance on the ZPMC "Production Monitoring Test Plate Inspection Report sheet dated 7-10-08. The QA Inspector visually inspected each of these macroetch samples and items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector performed digital photography of deck plate closed rib Production Monitoring Test (PMT) Macro Etch specimens representing deck plates DP142-001 and DP439-001 which were welded today. This QA Inspector measured and recorded the weld penetration of all fifteen macroetch samples and this information is documented on an Excel spreadsheet titled "SAS OBG PMT Macroetch Log" and a copy of this file is posted on the Caltrans "Team China" internal sever computer system. Copies of the digital photographs of each of the macroetch specimens are also posted on the Caltrans "Team China" common drive which is accessible to all Quality Assurance personnel including Task Leaders and Structural Materials Representatives.

The QA Inspector performed digital photography of deck plate closed rib Production Monitoring Test (PMT) Macro Etch specimens representing deck plate DP115-001, which was welded several days ago. A total of fifteen macroetch samples were photographed, see the Excel spreadsheet titled "SAS OBG PMT Macroetch Log" which is posted on the Caltrans "Team China" internal sever computer system. Copies of the digital photographs of each of the macroetch specimens are posted on the Caltrans "Team China" common drive which is accessible to all Quality Assurance personnel including Task Leaders and Structural Materials Representatives. Below is a digital photograph showing the weld specimens as they were found in the ZPMC bay 1 storage location prior to photography. These specimens appear to have become wet due to high humidity levels and all several of the macroetch surfaces exhibit a layer of rust. The QA Inspector wiped each specimen to remove rust and other contaminants prior to taking the photographs.

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Summary of Conversations:

No significant conversations occurred.

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 Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
