

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-001866**Date Inspected:** 19-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**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:** Tower and 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) and Tower Mock Up:

CWI Inspector: Mr. Wu Ming Kai

Bay 3

The QA Inspector observed three ZPMC welders using welding procedure specification WPS-B-T-2132-3 to make flux cored fillet welds on six OBG base plate BP085 stiffener 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 445 mm per minute, the base material has a minimum preheat temperature of 20° C and all six shielding gas flow meters appear to be within an acceptable range as listed in the welding procedure specification. As the welding commences, each of the welders is responsible for two of the flux cored welding heads. All welders are using 1.4 mm diameter E71T-1 rolls of electrodes that have been marked as being installed earlier today. Welder Mr. Sun Tiyu stencil 54459 completed weld BP085-01-015 with a welding current of approximately 315 amps and 30.0 volts and weld BP085-01-016 with a welding current of approximately 300 amps and 30.5 volts. Welder Mr. Xin Ming stencil 53742 completed

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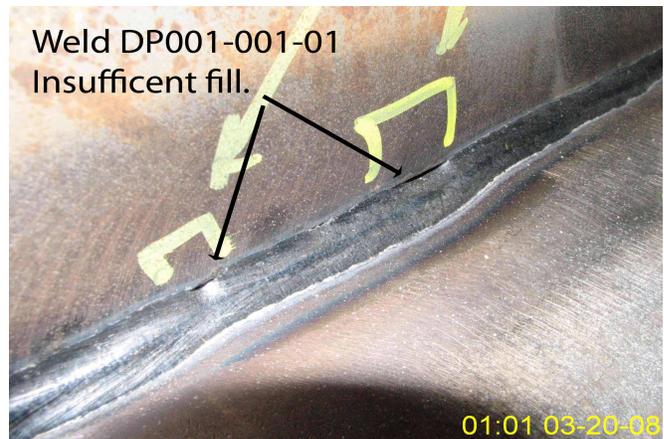
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weld BP085-01-019 with a welding current of approximately 320 amps and 29.5 volts and weld BP085-01-020 with a welding current of approximately 305 amps and 29.5 volts. Welder Mr. Li Shuliang stencil 48801 completed weld BP085-01-023 with a welding current of approximately 290 amps and 30.56 volts and weld BP085-01-024 with a welding current of approximately 275 amps and 30.0 volts. Items observed by the QA Inspector appear to comply with project specifications.

QA Inspector observed ZPMC welder Ms. He Yu Mei stencil 48625 is using welding procedure specification WPS-345-FCAW 1F(1G) Repair-1 to make flux cored welds along the edges of various "T" stiffener plates. ZPMC had previously used a torch to cut these plates and isolated areas of the torch cut edges had gouges which are being weld repaired. At this time ZPMC has not identified where these plates are to be installed. The QA Inspector observed a welding current of approximately 290 amps, 29.5 volts and the base material has a minimum preheat temperature of 10° C. Items observed by the QA Inspector appear to comply with project specifications.

Bay 1

The QA Inspector performed random visual inspections of deck plate DP001 closed rib welds #1, 2, 3, 4, 5 and 6. The QA Inspector observed several locations on these welds that have various degrees of weld insufficient fusion, weld overlap at the bottom toe and weld underfill conditions. The results of these inspections were submitted to engineering for review. See the photographs below for additional information.



Summary of Conversations:

ZPMC QC Inspector Mr. Wu Ming Kai informed the QA Inspector that ZPMC is going to grind side plate SP015 tack welds as listed in critical weld repair CWR048 this shift and that ZPMC will perform the magnetic particle inspection of these grind areas tomorrow.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Hager,Craig	QA Reviewer
