

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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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-001308**Date Inspected:** 09-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 230**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:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Orthotropic Box Girders (OBG).

Bay 2 89M Tower Mock Up:

The QA Inspector randomly observed ZPMC Non-Destructive Technician Cai Xin Xin and a helper, utilizing the Magnetic Particle Testing (MT), to examine the root passes in 89M Tower Mock Up Assembly at Weld Joint (WJ) Numbers MUB-MA21H/J-14, 15, 16 and 20. The QA Inspector asked ZPMC personnel to clean the dirt and debris from around the area around the welds prior to performing any MT; but there was an apparent lack of communication and the MT inspection proceeded without any cleaning. The QA Inspector waited until Mr. Cai was finished with his MT of the root pass of WJ MUB-MA21H/J-20, and then physically removed the dirt and debris in the areas of inspection on WJ MUB-MA21H/J-20. The QA Inspector then asked Mr. Cai to repeat the MT inspection of the root pass of WJ MUB-MA21H/J-20. Mr. Cai performed MT inspection on the cleaned WJ MUB-MA21H/J-20 while ZPMC personnel removed the dirt and debris from the rest of the area to be inspected. There appeared to be no indications and Mr. Cai accepted the MT inspection. The attached photographs provide additional detail.

While inside the 89M Tower Mock Up Assembly, a loud metallic bang was heard and felt by the QA Inspector, Mr. Cai, his helper and QA Inspector Ken Jobes, who was immediately outside the 89M Tower Mock Up Assembly. Upon investigation, 3 tack welds in WJ MUB-MA21D/J-3B between Skin Plate B (Sub-Assembly MA24) and Skin Plate C (Sub-Assembly MA23), were randomly observed to have cracked. Two of the tack

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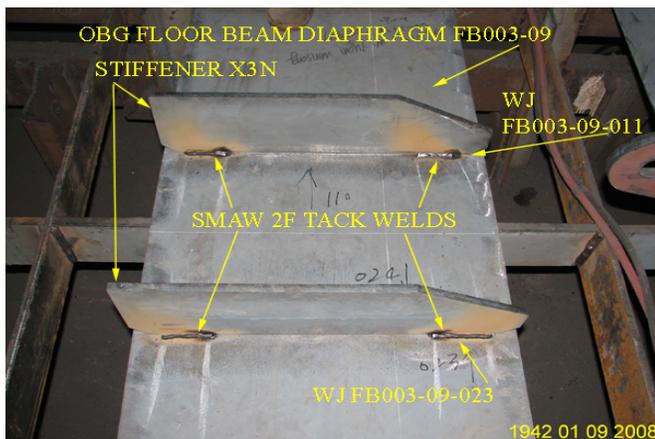
welds had completely failed and the 3rd had a definitive crack on one end and a linear indication on the other end. The length of the WJ is 3000 millimeters (mm), and the tack weld lengths are 180 mm, 140 mm and 220 mm. The 2 totally failed tack welds are the 180 mm and the 140 mm. The QA Inspectors informed ZPMC Quality Control of the cracked tack welds. The attached photographs provide additional detail.

Bay 7 OBG:

The QA Inspector randomly observed ZPMC welder Huang Xinlan ID Number 044780, utilizing the Submerged Arc Welding (SAW) Process with ZPMC approved WPS WPS-B-T-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes Floor Beam Web FB022-02 on WJ FBO022-02-079. The QA Inspector randomly observed ZPMC CWI Cui Yi Ru, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: welding amperage 543 amps, welding voltage 31.8 volts with a travel speed of 410 mm per minute. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

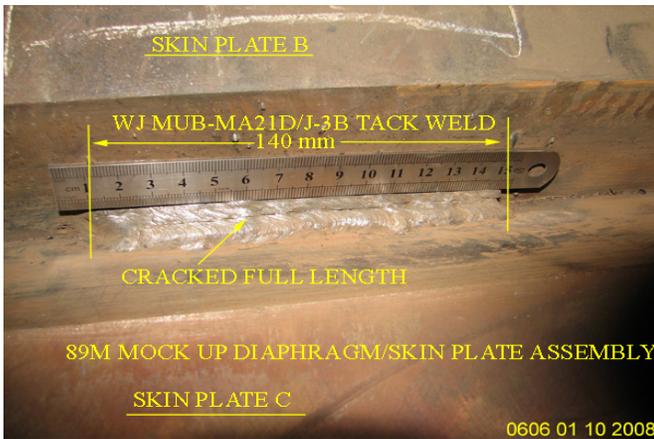
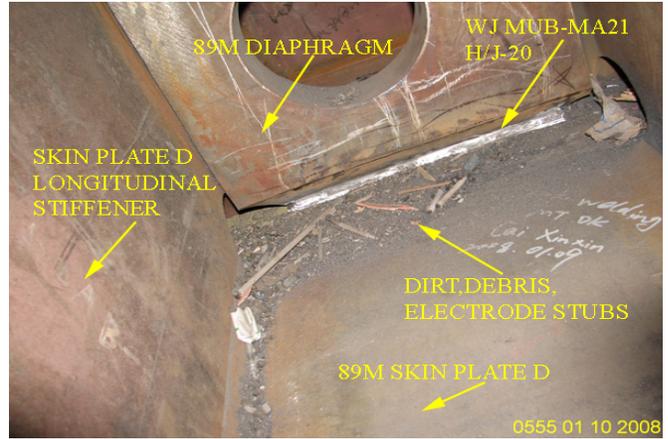
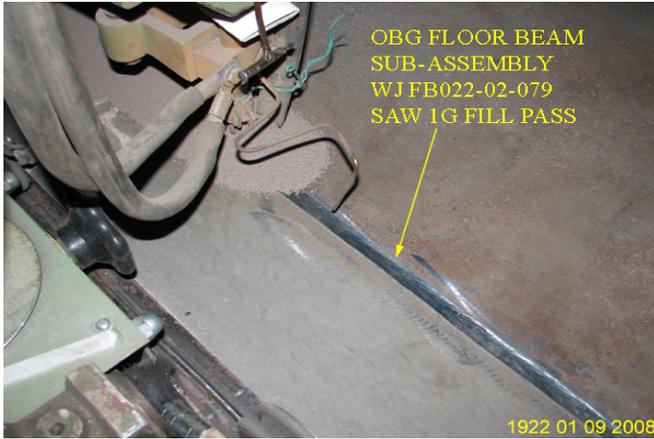
The QA Inspector randomly observed ZPMC welder Wang Changfa ID Number 058102, utilizing the Shielded Metal Arc Welding (SMAW) Process with ZPMC approved WPS WPS-B-T-2112 in the 2F position to weld Stiffener X3N (4 ea) to Floor Beam Diaphragms FB003-06 at WJ Numbers FB003-06-011, 012, 023, 024 and FB003-09 at WJ's FB003-09-011, 012, 023 and 024. The QA Inspector randomly observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Yang Xuhe ID Number 057795, utilizing the SMAW Process with ZPMC approved WPS WPS-B-T-2112 in the 2F position to weld Flange Plate to Floor Beam FB003-01 Diaphragm at WJ's FB003-01-004, 005. The QA Inspector randomly observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.



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Summary of Conversations:

As noted in the above body of this report.

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.

Inspected By: Franco, Charlie

Quality Assurance Inspector

Reviewed By: Cochran, Jim

QA Reviewer