

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-011319**Date Inspected:** 08-Dec-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:** Tower**Summary of Items Observed:**

CWI Inspectors: Mr. Zhao Chen Sun, Mr. Gong Liangzhu

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 BAY 6

This QA Inspector observed ZPMC welder Mr. Wang Zhong Hua, stencil 053753 is using shielded metal arc procedure WPS-485-SMAW-2F(2G)-FCM-Repair to make shear link repair weld WDI-A305-65M-4-10B. This weld location had been ultrasonically rejected and the repair is documented on ZPMC Weld Repair Document T-WR2787. This QA Inspector measured a welding current of approximately 185 amps. This QA Inspector confirmed that Mr. Wang Zhong Hua appears to be certified to make this weld. ZPMC personnel had installed an electric heater on the back side of the plate to preheat the base material prior to commencement of the welding. This QA Inspector observed the E9018 shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch and it appears to be connected to the welding power supply cable. This QA Inspector asked ZPMC CWI Mr. Zhao Chen Sun if he is monitoring the base material temperature where this repair welding is taking place. Mr. Zhao Chen Sun informed this QA Inspector the base material is adequately preheated by an electric heating element. This QA Inspector used a 230 degree Celsius temperature indicating crayon on the base material just above where this welding is taking place and the

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temperature indicating crayon melted, which indicates the base material is above 230 degrees Celsius. This QA Inspector asked Mr. Zhao Chen Sun if he is monitoring the maximum interpass temperature and he showed this QA Inspector that he has a Celsius degree temperature indicating crayon. Mr. Zhao Chen Sun informed ZPMC welder Mr. Wang Zhong Hua to stop additional welding until the base material had cooled below 230 degrees Celsius. Items observed on this date do not fully comply with applicable contract documents.

Tower Bay 10

This QA Inspector observed ZPMC welder Ms. Dong Yuqin, stencil 053116 is using flux cored welding procedure WPS-B-T-2132 to make north tower lift 4 corner assembly weld NSTL4-3G/L-058. This QA Inspector measured a welding current of approximately 300 amps and 30.0 volts and the base material has been preheated with a torch and ZPMC QC CWI Mr. Gong Liangzhu is monitoring this welding. This QA Inspector observed that Ms. Dong Yuqin 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 Ms. Pu Xuezheng, stencil 052075 is using flux cored welding procedure WPS-B-T-2132 to make north tower lift 4 corner assembly weld NSTL4-3K/L-004. This QA Inspector measured a welding current of approximately 290 amps and 29.5 volts and the base material has been preheated with a torch and ZPMC QC CWI Mr. Gong Liangzhu is monitoring this welding. This QA Inspector observed that Ms. Pu Xuezheng 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. Xu Xiuping, stencil 057244 is using flux cored welding procedure WPS-B-T-2132 to make north tower lift 4 corner assembly weld NSTL4-3H/L-002. This QA Inspector measured a welding current of approximately 285 amps and 30.5 volts and the base material has been preheated with a torch and ZPMC QC CWI Mr. Gong Liangzhu is monitoring this welding. This QA Inspector observed that Mr. Xu Xiuping 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 workers near the front of Tower Bay 10 where a tower skirt plate was located and as this QA Inspector walked toward this skirt plate one of the workers placed a portable electrode storage oven behind one of the skirt plate stiffeners and all the workers then moved away from the skirt plate. This QA Inspector felt one of the skirt plate stiffener plate welds and it was too hot to touch. This QA Inspector did not observe any ZPMC QC Inspectors anywhere near this tower skin plate. This QA Inspector walked to the rear of Tower Bay 10 and requested that ZPMC QC CWI Mr. Gong Liangzhu come to the front of Tower Bay 10 where he could talk to the workers who had been on the skirt plate to determine who had performed the welding and if there had been a ZPMC QC representative monitoring the tack welding. ZPMC QC CWI Mr. Gong Liangzhu talked to the workers and they said none of them had been tack welding any skirt plate stiffeners. This QA Inspector showed ZPMC QC CWI Mr. Gong Liangzhu that one of the tack welds was very warm and a photograph of the welding electrode storage oven. He agreed that it appears that someone had recently performed tack welding of this stiffener plate and he told the workers that they should not perform any welding without having a ZPMC QC Inspector present. Items observed on this date do not appear to fully comply with applicable contract documents.

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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 Serge Sinevod phone: 134-8257-0045 , who represents the Office of Structural Materials for your project.

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