

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-003886**Date Inspected:** 05-Sep-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Wu Ming Cai and Zhashi**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 SAS Tower Fabrication**Summary of Items Observed:**

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on sub-assembly Bays mentioned below;

Bay 2: 114M Tower Mock-ups, Plate Cutting, Rolling

This QA Inspector observed machining/beveling of 5-60mm thick plates marked P1144S and 2-45mm thick plate marked A5 for tower diaphragm plate seen in progress. Drilling of 55-30mm bolt holes on 70mm stiffener/connection plate marked P709 and cutting of 80mm thick plate marked P1313 were seen in progress. Rolling machine was noted idle.

Bay 3: OBG side/bottom/edge panel

The QA Inspector randomly observed ZPMC welder operator ID Number 048810 and ID #053742, utilizing the FCAW Process in the 2F (Horizontal Fillet) Position with gantry(#1) mounted welding apparatus and ZPMC WPS WPS-B-T-2132-3, to weld 7-open-ribs stiffener to side plate SP406-001-weld joints 005/006 and 011/012 respectively. The QA Inspector randomly observed ZPMC CWI Wu Ming Cai monitoring weld parameters.

This QA Inspector also randomly observed ZPMC welder operator ID Number 054459 and ID #062447, utilizing the FCAW Process in the 2F (Horizontal Fillet) Position with gantry(#2) mounted welding apparatus and ZPMC WPS WPS-B-T-2132-3, to weld 6-wt(W18x46) ribs stiffener to side plate SP610-001-weld joints 015/016 and

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

019/020 respectively. The QA Inspector randomly observed ZPMC CWI Wu Ming Cai monitoring weld parameters.

Tack/fit-up of 6-WT (W21x57) rib stiffener to various side plates SP152-001-013~024 and SP311-001-043~049 using THJ506Fe-1 was also noted.

Bay 4: Tower Diaphragm

This QA observed two ZPMC welders ID #068918 and ID #037779 SMAW(2G) PJP welding fill pass on 60mm stiffener plate to tower double diaphragm(bottom) NSD1-SA21B/B weld joints 1 and 2. ZPMC welders were noted utilizing Excalibur E9018M H4R, 4.8mm diameter electrode. The QA Inspector randomly observed ZPMC CWI Zhashi monitoring weld parameters.

Heat straightening was also observed on tower double diaphragm SSD1-SA276 weld joints 2A and 2B due to welding distortion. Natural gas was used with thermal heat input of less than 600 degree C following procedure HSR1(T) – 3643.

Bay 7: OBG - Floor Beam Sub Assembly

The QA Inspector randomly observed ZPMC welder Duan Xiu Zhi ID Number 050502, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-L2c-S-2, to weld the CJP fill pass on plate splice butt joint of floor beam sub-assembly FB011-044-026. QA Inspector randomly observed ZPMC CWI Huang Wen Pang monitoring weld parameters.

This QA Inspector also randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-L2c-S-2, to weld the CJP cover pass on plate splice butt joint of floor beam sub-assembly FB013-022-020. QA Inspector randomly observed ZPMC CWI Huang Wen Pang monitoring weld parameters.

Heat straightening was also observed on flange to web of floor beam FB030-001 and FB032-001 weld joints 079, 122, 125, 126 and 127 due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 600 degree C with the aid of three jacks following procedure HSR1(B)–210 and 211 respectively.

Bay 8: Tower Diaphragm

This QA observed three ZPMC welders, ID #066734, ID #037944 utilizing the FCAW Process in the 2F (Horizontal) Position with a 1.4mm diameter electrode, filler metal brand K-71TSR, semi automatic with ZPMC WPS WPS-B-T-4132 to weld fillet fill pass on fillet weld connection between tower diaphragm plate to diaphragm flange NSD1-SA265-2. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

Tack/fit-up of tower diaphragm flange to diaphragm plate fillet weld connection WSD1-SA290-1 using SMAW THJ506Fe-1, 5.0mm electrode was also observed.

The QA Inspector randomly observed ZPMC Welders ID #067081, ID #045246, utilizing the Shielded Metal Arc Welding (SMAW) Process with Excalibur E9018M H4R electrode in the 4G (Overhead Groove) to tack weld 40mm thick web plate to top tower double diaphragm ESD1-SA301B/B weld joints 5 and 6.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Summary of Conversations:

No significant conversation occurred today.

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 Joshua Ishibashi, (858) 232-7081, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo, Joselito	Quality Assurance Inspector
Reviewed By:	Cuellar, Robert	QA Reviewer
