

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-003291**Date Inspected:** 08-Jul-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:	Hu Wei Qing and Lvliqing	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
Bridge No:	34-0006	Delayed / Cancelled:	Yes	No	N/A
		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 7: OBG - Floor Beam Sub Assembly

This QA observed tack weld/fit-up of skewed connection plate (of 300mm x 300mm diagonal brace) to floor beam bottom flange using 4.0mm diameter TL-508 electrode at weld joint SSD13A-PP035-132. In this fit-up, the alignment of the connection plate to continuity/gusset plate was measured 3.0mm contrary to the allowable 1.4mm. Per ZPMC, there was a change in the diagonal brace dimension (from 305mm x 305mm to 300mm x 300mm hollow steel) that caused the discrepancy. However, few hours later after revisiting the site, tack weld was removed and pre-assembly reset.

QA Inspector J. Lizardo randomly observed two ZPMC qualified welder Zhang Qing Quan ID #066418 and Chen Chuan Zong ID #044824 groove welding fill pass on (flange to web plate) tee joint. Mr. Zhang and Mr. Chen were observed welding in the 2G (horizontal) position utilizing a flux corded arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic at floor beam FB039-001-146 and FB028-002-146 respectively. QA inspector Lizardo observed the ZPMC QC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS).

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

SMAW tack welding was also noted on multiple stiffeners to web plate of floor beam FB027-001 and FB028-001 using 4.0mm diameter, TL-508 electrode and flange to web plate using the same electrode at floor beam FB020-001. SMAW(2F/3F) fillet welding on 8.0mm thick plate end cap to 300mm x 300mm hollow steel diagonal brace for various beam FB006-040-002, FB006-039-004, FB006-039-002, and FB006-037-004 using 3.2mm diameter TL-508 electrode. This QA observed ZPMC welder Yang Gencheng ID #066418 doing the task and ZPMC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS).

This QA observed ZPMC/UT Inspectors Xue Hairong and Xu Ronggang perform UT on CJP of web plate to flange (corner tee joint) on floor beams FB011-001-045, FB011-006-045, FB015-008-043 and FB010-009-043.

Bay 8: Tower Diaphragm

This QA Inspector randomly observed two ZPMC welder Jiang Yong Sheng ID number 045240 and Chen Chao Nian ID #048688 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill pass on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly ESD1-SA226 weld joint 3B and SSD1-SA169 A/B-11A respectively. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

Heat straightening was also observed on tower diaphragm flange WSD1-SA32 A/B weld joints 6A/B, 8A/B, 9A/B and 11A/B due to welding distortion. Natural gas was used with thermal heat input of less than 650 degree C and with the aid of 50-Ton hydraulic Ram following procedure HSR1(T)-2616. Another heat straightening was observed on longitudinal shear plate LD004-006 weld joints 001~012 due to welding distortion using oxy-acetylene gas with thermal heat input of less than 650 degree C following procedure HSR1(B)-1280.

This QA observed fillet weld connection between tower diaphragm plate to diaphragm flange SSD1-SA326 has a measured gap of 6.0mm maximum all around. Tack welding followed after measuring the gap (and after preheating to >160 degree C) using 4.0mm RHJ506Fe-1 per WPS-B-T-4112-4. QA Inspector Lizardo observed the ZPMC QC CWI Inspector Lvliqing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS).

FCAW fillet welding (2F) was observed on flange to web plate on floor beam sub-assembly FB045-006 weld joints 007 and 008. ZPMC welders working on these were identified as Yan Shi Tian ID# 062708 and Wang Cai Li ID #045203. ZPMC CWI Hu Wei Qing was noted monitoring the parameters.

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: Cochran, Jim

QA Reviewer