

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-003569**Date Inspected:** 12-Aug-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 2-40mm thick plates marked P549 and P337 (double bevel of 45 degree two sides of the plate) for tower double diaphragm web plate seen in progress and 5-30mm thick plates marked FB10A, FB9B, FB139B, FB16A and FB15A transition machining on both sides of the plate also seen in progress. Cutting of 75mm thick plates marked P969, P970, SA356, SA369, SA404 and SA381 with various sizes and shapes seen complete. Rolling machine so with tower mock-up 114M were both idle.

Bay 3: OBG side/bottom/edge panel

The QA Inspector randomly observed ZPMC welder operator Xin Meng ID Number 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 6-open-rib stiffener to side plate SP405-001-007/008. The QA Inspector randomly observed ZPMC CWI Wu Ming Cai monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 298 amps, 30.1 volts; 306 amps, 30.4 volts. Travel speed for all welds was randomly observed at 450 mm per minute. The weld parameters appeared to comply with contract requirements.

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Tack/fit-up of 6-open rib stiffener to side plate SP398-001-004~015 and SP408-001-003~014 using TL-508 and 3-open rib stiffener to deck plate DP705-001-001~006 using THJ506Fe this QA observed.

Bay 4: Tower Diaphragm

This QA observed two ZPMC welders, Han Kun ID #066781, and Hansi Qi ID #202842 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 WSD1-SA317-1. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun monitoring weld parameters.

SMAW tack welding on 60mm thick stiffener plate to (top) tower double diaphragm plate ESD1-SA318B/B weld joints 11 and 16 using Excalibur E9018M H4R this QA observed. Preheating to >180 degree C using ceramic thermal blanket PJP connection of 40mm thick web plate to (bottom) tower double diaphragm plate ESD1-SA238B/B weld joints 1 and 2 was noted. After attaining required preheat, this QA observed four ZPMC welders, ID #068918, ID #053753, ID #048659 and ID #066416 SMAW welding root pass on PJP joints mentioned above. The QA Inspector randomly observed ZPMC CWI Zhashi monitoring weld parameters.

Heat straightening was also observed on open rib stiffener to deck panel DP517(A)-001 weld joints 001, 002 DP514(A)-001 weld joints 001, 002 and BP312(A)-001 weld joints 033, 035, 037, 039, 057, 058 and 009~020 due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 650 degree C following procedure HSR1(B) – 1919, HSR1(B)-1918 and HSR1(B)-1903.

Bay 7: OBG - Floor Beam Sub Assembly

This QA Inspector randomly observed ZPMC welder Hong Shuili ID #044815 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-TC-U4b-F, to weld fill passes on continuity plate to floor beam bottom flange FB003-025 weld joints 032 and 044. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring preheat and weld parameters.

FCAW(2F) fillet welding on stiffener to web plate of floor beam FB031-001-084/085, 096/097 and 098/099 utilizing 1.4mm diameter, filler metal brand E71T-1, class Supercored 71H by ZPMC welder Chen Chuanzong ID #044824 this QA also observed.

Bay 8: Tower Diaphragm

The QA Inspector randomly observed ZPMC Welders ID #045148, and ID #045246 utilizing the Shielded Metal Arc Welding (SMAW) Process in the 3G (Vertical Groove) Position with ZPMC WPS WPS-B-T-3313-Tc-P5 to weld tower double diaphragm PJP fill pass on 40mm thick web plate to 60mm thick stiffener plate tee joint ESD1-SA371 B/B weld joints 11 and 12. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters. SMAW tack welding of 40mm/60mm thick web/stiffener plate to (bottom) tower double diaphragm plate SSD1-SA277B/B and ESD1-SA316B/B was also observed.

This QA observed ZPMC welders, Liu Daiquan ID #066401, 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

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WPS-B-T-4132 to tack fillet weld connection between tower diaphragm plate to diaphragm flange ESD1-SA301A/B-2. Another ZPMC welder, ID #045218 was observed tack welding the same connection at ESD1-SA290-1 using E7018(THJ506Fe). Gap measured on both connections were 6.0mm maximum. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

This QA also observed ZPMC/NDE personnel performing 100%MT on tack welds of 40mm/60mm web/stiffener plate to (bottom) tower double diaphragm plateS SSD1-SA277B/B and ESD1-SA316B/B.

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,Josecito	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
