

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-003309**Date Inspected:** 19-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:	Wu Ming Cai and Zhao Chen Sun			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 observed beveling/machining of 7-60mm thick plates marked P243 and cutting of 20mm thick plate marked DP543, DP548, DP558, DP563, DP583 etc. was seen in progress. Rolling and mock up 114M were both seen idle.

Bay 3: OBG side/bottom/edge panel

The QA Inspector randomly observed two ZPMC welder operators Li Shao Qian ID #048810 and Wei Da Shuan ID #051246 utilizing the Flux Cored Arc Welding (FCAW) Process in the 2F (Horizontal Fillet) Position with gantry mounted welding apparatus and a 1.4mm diameter electrode, filler metal brand Supercored 71H semi automatic to weld fillet between 6-open rib stiffener to bottom panel BP305A-001 weld joints 015/016 and 019/020 using ZPMC Weld Procedure Specification (WPS) WPS-B-T-2123-3. QA Inspector Lizardo randomly observed ZPMC CWI Wu Ming Cai monitoring weld parameters.

Tack welding/fit-up of 6-open rib stiffener to side panel SP302-001-002~013, and SP190-001-002~013 using THJ506Fe-1, 4.0mm electrode was noted. This QA observed, paint coating removed, tight fit for fillet weld and

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preheating implemented prior tack welding.

This QA also observed ZPMC/NDE perform UT on SAW welded plate splice butt joint of bottom panel BP198-001-007.

Bay 4: Tower Diaphragm

This QA Inspector randomly observed two ZPMC welders Li Xue Hua ID #058174, and welder 066751 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 passes on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly WSD1-SA317 A/B weld joints 11B and 8B respectively. The QA Inspector randomly observed ZPMC CWI Zhao Chen Sun monitoring preheat and weld parameters.

This QA observed two ZPMC welder, ID #053609 and ID #053605 welding fillet pass on this fillet weld connection between tower diaphragm plate to diaphragm flange ESD1-SA234 A/B-1 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. The QA Inspector randomly observed ZPMC CWI Zhao Chen Sun monitoring weld parameters.

Heat straightening was also observed on 45mm thick plate marked A8-1 due to mill distortion. Natural gas was used with thermal heat input of less than 650 degree C and following procedure HSR1(T)-2750. Bending of heavy plate marked P1256(S)-1 4/22(C) intended for tower diaphragm flange was also noted. Oxy-acetylene 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)-2045.

Bay 7: OBG - Floor Beam Sub Assembly

The QA Inspector randomly observed ZPMC welder Hong Shuili ID Number 044815 and Wu Haijun ID #201087, utilizing the Flux Cored Arc Welding (FCAW) Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2231-Tc -U4b-F, to weld the fill pass on CJP between flange and web plate on corner assembly CA006-053/054 and Ca002-047/048. The QA Inspector randomly observed ZPMC CWI Hu We Qing, monitoring weld parameters. FCAW fillet welding (2F) was observed on flange to web plate of floor beam FB027-001-093. ZPMC welder working on this was identified as Meny Tao ID# 068918. Another fillet welding(2F) was noted on stiffener to web plate of longitudinal shear plate LD021-002-003. ZPMC CWI Hu Wei Qing was noted monitoring the parameters.

Bay 8: Tower Diaphragm

This QA Inspector randomly observed two ZPMC welder Yuan Wei ID number 066164 and Chen Chao Nian ID #048688 and 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 SSD1-SA334 A/B-11B and WSD1-SA372 A/B-4B. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters. Tack welding of fillet weld connection between tower diaphragm plate to diaphragm flange NSD1-SA270-8 was also noted. Gap between the connection was measured at 6.0mm wide and preheated to >160 degree C prior to tack with THJ506Fe-1 electrode.

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The QA Inspector randomly observed ZPMC welder Wang Cai Li ID Number 045203, utilizing the FCAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2231-B-U2-F-1, to weld the root pass on plate splice butt joint of floor beam FB088-002-015. The QA Inspector randomly observed ZPMC CWI Lvliqing, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 288 amps, 30.0 volts with travel speed of 536mm/minute. Weld parameters appeared to comply with contract requirements.

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 Ady Velasco, (858) 344-8746, who represents the Office of Structural Materials for your project.

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