

**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-003938**Date Inspected:** 17-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

<b>CWI Name:</b>	Wu Ming Cai and Huang Wen Pan			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	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 1: OBG Sub assembly**

QA Inspector J. Lizardo randomly observed ZPMC welding utilizing the dual process WPS-B-T-2342-U1 (U-rib)-4 welding procedure specification for closed rib welding for Production Panel 8AW-DP173-001, on U12, U22 and U10 U-rib Partial Joint Penetration (PJP) welds in Bay #1. ZPMC welding personnel performed gantry #2 mounted machine, Gas Metal Arc Welding (GMAW) for the root pass. ZPMC welders performing the task were ID #059378 and ID #059416 for U-rib 12, ID #059468 and ID #059443 for U-rib 22 and ID #062265 and ID #059361 for U-rib 10. This QA observed ABF/QA and ZPMC/CWI monitoring welding parameters.

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

This QA Inspector observed machining/beveling of 2-75mm thick plate marked SA425 and SA404 for tower diaphragm plate and 1-40mm thick plates marked P658 for tower double diaphragm web plate was seen continuing. Drilling of 16-28mm diameter bolt holes on one side of 12mm thick corner assembly plate CA17c was seen in progress. No Caltrans job at the cutting table and rolling of 1-70mm thick plate marked P1120 was seen complete.

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## Bay 3: OBG side/bottom/edge panel

This QA Inspector also randomly observed ZPMC welder operator ID Number 051246, 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 wt(W21x57) rib stiffener to side plate SP100-001-weld joints 027/028. The QA Inspector randomly observed ZPMC CWI Wu Ming Cai monitoring weld parameters.

The QA Inspector randomly observed ZPMC welder He Yu Mei ID Number 048625, utilizing the FCAW Process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2231-B-U2-F, to weld fill pass on WT (W21x57) web splice butt joint SP368-001, and SP341-001. The QA Inspector randomly observed ZPMC CWI Wu Ming Cai monitoring weld parameters.

## Bay 4: Tower Diaphragm

Tack/fit-up of 40mm web plate to (bottom) tower double diaphragm plate WSD1-SA238B/B weld joints 5 and 6 using SMAW(2G) Excalibur E9018M H4R electrode this QA observed. Bevel repair/buttering was also observed on ESD1-SA234B/B per T-WR264 and following WPS-485-SMAW2G(2F)-REPAIR.

Heat straightening was observed on tower diaphragm plate NSD1-SA20 due to mill induce distortion. Natural gas was used with thermal heat input of <600 degree C following procedure HSR1(T)-4243.

## 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 FB012-021-026. 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 fill pass on plate splice butt joint of floor beam sub-assembly FB014-028-020 and FB014-029-002. QA Inspector randomly observed ZPMC CWI Huang Wen Pang monitoring weld parameters.

This QA Inspector randomly observed ZPMC welder Hong Shuili ID #044815 utilizing the FCAW Process in the 2G (Hor. Groove) Position with WPS-B-T-2232-TcU4b-F and a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic to weld fill pass on connection plate end to web plate on floor beam FB078-001-025/020. The QA Inspector randomly observed ZPMC CWI Huang Wen Pang monitoring preheat and weld parameters.

## Bay 8: Tower Diaphragm

The QA Inspector randomly observed ZPMC Welders ID #045246, ID #043138 ID #068924 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 NSD1-SA270 weld joints 14, 15, and 16. The QA Inspector randomly observed ZPMC CWI Liu Hua Jie monitoring weld parameters.

FCAW(1G) PJP welding root pass on tower diaphragm plate splice butt joint ESD1-SA416 weld joints 4 and 6 following WPS-B-T-2331-B-P3-F-1 was also observed. The QA Inspector randomly observed ZPMC CWI

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Lvliqing monitoring weld parameters.

## 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.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

**Reviewed By:** Cuellar, Robert

QA Reviewer