

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-003520**Date Inspected:** 10-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:** Hu Wei Qing 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 P533 and P11 (double bevel of 45degree two sides of the plate) for tower double diaphragm web plate seen in progress and 4-30mm thick plates marked FB14A and FB5A being set at the table for transition machining. Cutting of 38mm thick plates marked SA358, SA361, P783, P2040, SA363, SA360, SA299 and SA411 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

This QA observed cutting of 20mm thick plate for open rib stiffener EP105, EP106 & EP109; and drilling of 24mm diameter bolt holes on open rib stiffener plate DP731 and DP733 were in progress.

Tack welding/fit-up of fillet weld connection of 2-open rib stiffener to various edge panels EP097-001-001~004 and EP108-001-001~004 using THJ506Fe electrode noted. Preheating with ceramic thermal blanket 3-open rib stiffener to deck plate DP634-001-weld joints 001/002 and 005/006 prior welding at gantry #1 also noted. This QA marked SAW welded plate splice butt joints DP625-001-019, DP635-001-019, DP516-001-015 and

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DP637-001-019 for radiography.

Bay 4: Tower Diaphragm

This QA Inspector randomly observed ZPMC welders ID #058174, ID #202821, ID #053609 and ID #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 NSD1-SA333 A/B-weld joints 4A, 7A and 12A and WSD1-SA287-weld joint 12B respectively. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun monitoring preheat and weld parameters.

This QA observed FCAW(1G) buttering of tower diaphragm bent heavy plate ESD1-SA313-10A/B per T-WR113 and following procedure WPS-345-FCAW-1G(1F)-REPAIR. ZPMC welder Li Meng Qian ID #054460 was noted performing the task and ZPMC CWI Zhashi monitoring preheat and weld parameters.

This QA observed two ZPMC welders, ID #062259, and 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 ESD1-SA318 A/B-1. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun monitoring weld parameters.

This QA observed ZPMC welder ID #068918, ID #053753, ID #066426, and ID #048659 SMAW(2G) PJP welding fill pass on 40mm web plate to tower double diaphragm(bottom) ESD1-SA238 B/B weld joints 5 and 6. ZPMC welders were noted utilizing Excalibur E9018M H4R, 4.8mm diameter electrode. The QA Inspector randomly observed ZPMC CWI Zhashi monitoring weld parameters. SMAW(4G) tack welding of 60mm stiffener plate to (top) tower double diaphragm plate SSD1-SA333- weld joint 14 by ZPMC welder ID #047769 and grinding/cleaning of other tack welds on this double diaphragm was also observed.

Bay 7: OBG - Floor Beam Sub Assembly

SMAW(2G) CJP welding repair on CJP of flange to web plate tee joint FB015-009-045 due to UT reject per welding repair report B-WR737 and following procedure WPS-345-SMAW-2G(2F)-REPAIR. FCAW(2G) CJP welding repair on CJP of flange to web plate tee joint FB015-009-045 due to UT reject per welding repair report B-WR715 and following procedure WPS-345-FCAW-2G(2F)-REPAIR 1. ZPMC welder Hu Yacheng ID #049339 was seen performing the repair.

The QA Inspector randomly observed ZPMC welder Zhang Qing Quan ID Number 044774, utilizing the FCAW Process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H in the 3G (Vertical Groove) Position with ZPMC WPS WPS-B-T-2233-Tc-U4b-F, to weld fill pass on skewed connection plate (of 300mm x 300mm diagonal brace) to floor beam bottom flange Sub-Assembly SSD15B-PP042-131/132. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters.

FCAW(2F) fillet welding on stiffener to web plate and flange to web plate of floor beam FB035-001-031/030 and FB035-001-114 utilizing 1.4mm diameter, filler metal brand E71T-1, class Supercored 71H by ZPMC welder Zhang Lliang ID #067036 and Wang Hong Lei ID #066687, this QA also observed.

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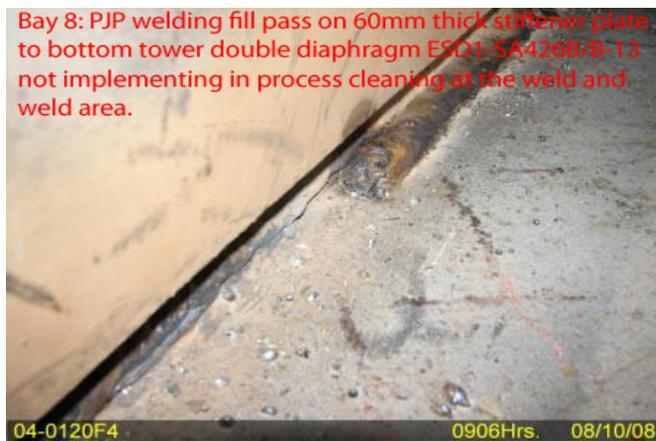
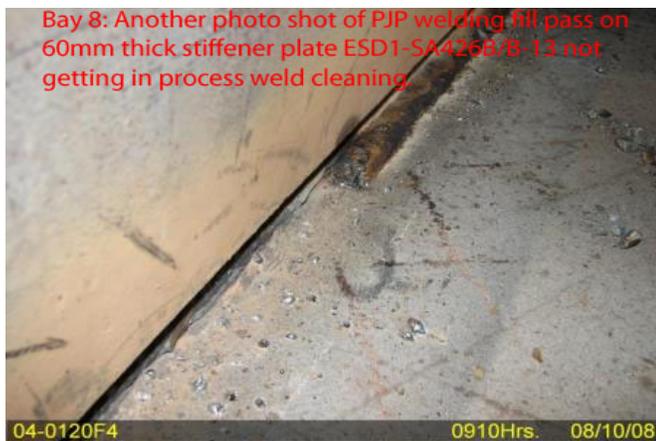
Bay 8: Tower Diaphragm

This QA observed PJP welding fill pass on 60mm thick stiffener plate to (bottom) tower diaphragm plate ESD1-SA426 B/B weld joint 13. In this welding, ZPMC welder was observed not cleaning the interpass/spatters at the weld area. Due to this infraction, an incident report was issued against ZPMC. See photo below.

This QA Inspector randomly observed ZPMC welder ID number 066675 and ID #045236 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 NSD1-SA311 A/B weld joint 3B and 11B respectively. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters.

This QA observed tower double diaphragm ESD1-SA371 B/B weld joints 3 and 4, (40mm thick web plate to (bottom) plate) have root pass already been welded without the (top) double diaphragm plate not tack welded. This is again in violation of Fabrication Procedure steps 2 and 3 of FP-MUA-20. While this violation was noted, SMAW (4G) tack welding on 60mm stiffener plate to top tower double diaphragm plate ESD1-SA371 B/B weld joints 9 and 10 was being performed by ZPMC welders ID #067561 and ID #045148.

The QA Inspector randomly observed two ZPMC Welders ID #066456 and ID #067993 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-SA309 B/B weld joints 13 and 14. The QA Inspector randomly observed ZPMC CWI Zhashi 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