

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-009711**Date Inspected:** 06-Oct-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Bo**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:** Deck Panels**Summary of Items Observed:**

On this day Caltrans OSM Quality Assurance (QA) Inspector Christopher D'souza was present during the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhen Hua Port Machinery Company (ZPMC) at Chang Xing Island in Shanghai, China. QA Inspector observed and/or found the following:

OBG Assembly Yard

This QA Inspector was present at OBG trial assembly yard to perform conventional UT (Ultrasonic Testing) in conjunction with ABF UT department for detection of planar transverse indication.

Following welds OBE2 - 001, OBE2 - 005, OBW2 - 001 and OBW2 - 005 were to be inspected by UT. It was observed that the paint from these areas was not removed and the splice was not ready for UT. ABF grinding personal found the scaffolding unsafe and were waiting on approval to proceed.

ABF/ZPMC provided these splices ready for inspection after 1300; QA Inspector Bert Madison performed UT on the above mentioned areas.

See Caltrans Ultrasonic Transverse Indication Evaluation sheet dated October 6th, 2009 for further information on inspections.

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QA Inspector observed ABF and ZPMC NDT technician perform MT (Magnetic Particle Testing) on U-Rib to deck plate tack welds of DP 3058-001 (12BW) and DP 3014-001 (12BE), cracked tacks were marked for repair by ZPMC. This inspection and repair is being performed prior to gantry welding of these panels

This QA Inspector observed ZPMC welding personnel performing Gas Metal Arc Welding (GMAW) tack welds on closed rib Partial Joint Penetration (PJP) welds to deck plate designated as DP 3065-001. Welder is identified as 062305. ZPMC QC is identified as Chen Shi gang. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2342 – U5

This QA Inspector observed ZPMC welding personnel's performing Flux cored arc welding (FCAW) on Diaphragms to U-Rib designated as DP 3069-001. Welder is identified as 059443. ZPMC QC is identified as Chen Shi gang. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2133

QA inspector performed conventional Ultrasonic (UT) Inspection on deck panel tack weld areas. The inspection is preliminary prior to using the phased array (PAUT) testing system to verify indications found with conventional Ultrasonic testing. QA inspector performed UT on deck panel DP3016-001, 4 ribs, 8 welds, 160 total tack welds inspected.

Weld 1 scanned 20 locations with 10 indications.

Weld 2 scanned 20 locations with 2 indications.

Weld 3 scanned 20 locations with 0 indications.

Weld 4 scanned 20 locations with 3 indications.

Weld 5 scanned 20 locations with 3 indications.

Weld 6 scanned 20 locations with 1 indication.

Weld 7 scanned 20 locations with 3 indications.

Weld 8 scanned 20 locations with 2 indications.

QA Inspector performed initial Phased Array Ultrasonic Testing (PAUT) following the guide lines of UT procedure titled "Phased Array Ultrasonic Testing for the Detection and Sizing of Suspected Planar Discontinuities (Cracks) in PJP Welds, # UT 04-0120F4 PJP Rib Weld" after conventional UT was performed on tack welded areas of the Partial Joint Penetration (PJP) welds joining u-ribs to deck plate. The deck panels examined are as follows:

DP3016-001: 13 tack weld locations found compliant and 11 tack weld locations found non-compliant.

Tack weld locations found non-compliant are marked on U-rib and deck plate for ZPMC's reference for repair. See Caltrans U-rib to Deck Panel- Tack Weld Assessment sheets dated 6th October, 2009 for further information on PAUT inspections.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

## **Summary of Conversations:**

No relevant conversations.

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## 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 Eric Tsang 15000422372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Dsouza,Christopher	Quality Assurance Inspector
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<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer
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