

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-001850**Date Inspected:** 27-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1800**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wie**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 Inspector (QA) Steve Hall was present During the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

OBG bay 1

QA observed ZPMC qualified welding personnel perform the Gas Metal Arc Weld (GMAW) and Submerged Arc Weld (SAW) PMT# 1 for deck panels DP-118-001 and DP-407-001 on gantry #2. ZPMC welding personnel commenced welding PMT #1 for gantry 2 at 0748 hrs for deck panels DP-118-001 and DP-407-001. Both QC and QA finished the Visual Testing (VT) of the PMT welds at 0840 hrs. ZPMC QC Ultrasonic Testing (UT) technician did not arrive in bay one until 0920 hrs. The welding parameters and welder ID's for PMT #1 are as follows:

GMAW

Volts: 30.1 – 30.7 Amps: 362 – 371 Travel speed: 535mmpm

SAW

Volts: 24.4 – 25.5 Amps: 679 – 688 Travel speed: 530mmpm

Welder ID#'s

Weld joint 1: 059443

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Weld joint 2: 062265  
Weld joint 3: 059421  
Weld joint 4: 059378  
Weld joint 5: 059403  
Weld joint 6: 059416

After the completion of the PMT QA observed ZPMC qualified welding personnel perform the GMAW and SAW welds joining the closed U-Ribs to deck panel DP-218-001 and DP-407-001. QA observed 7 ZPMC QC inspectors in the vicinity of the welding operations including ZPMC CWI identified as Sun Wei. There were also 6 American Bridge/Fluor (ABF) inspectors in the area as well. Caltrans QA task leader noted ZPMC was not visually inspecting the GMAW root welds on these production deck panels. QA and ABF QC inspectors performed a random visual inspection of the GMAW root welds on both DP-218-001 and DP-407-001 and found what appeared to be lack of fusion on the top toe of the welds in several areas of both panels. ZPMC elected to grind these areas down to the fusion line before performing the SAW welding process. After grinding, these areas appeared to meet the requirements of the WPS and contract documents so ZPMC proceeded with the SAW welding on both panels mentioned above.

QA and QC monitored the welding process continuously throughout the day. The welding parameters as measured with the calibrated gages on the machines appeared to be in conformance with the posted WPS's.

### DP-218-001 GMAW

Volts: 29.4 – 30.9 Amps: 361 – 378 Travel Speed: 533 - 535 mmpm

### DP-407-001 GMAW

Volts: 29.3 – 31.3 Amps: 351 – 377 Travel Speed: 530 - 535 mmpm

### DP-218-001 SAW

Volts: 24.6 – 26.1 Amps: 673 – 691 Travel Speed: 510 - 515 mmpm

### DP-407-001 SAW

Volts: 24.5 – 25.7 Amps: 671 – 690 Travel Speed: 510 mmpm

Gantry #1 was experiencing some technical difficulties today so no welding activities were performed on this gantry today.

### Summary of Conversations:

There were no conversations pertinent to this project 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 Patrick Lowery (858)-344-2712, who represents the Office of Structural Materials for your project.

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**Inspected By:** Hall, Steven

Quality Assurance Inspector

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**Reviewed By:** Cuellar,Robert

QA Reviewer