

**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-001963**Date Inspected:** 13-Apr-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Wang Yan hua**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 (Gantry 1)

QA observed ZPMC qualified welding personnel perform the GMAW welds joining the closed U-Ribs to deck panel DP-325-001 and DP-053-001. QA observed 5 ZPMC QC inspectors in the vicinity of the welding operations including ZPMC CWI identified as Wang Yan hua. There were also 3 American Bridge/Fluor (ABF) inspectors in the area as well. QA and ABF QC inspectors performed a random visual inspection of the GMAW root welds on both panels. All welds on DP-325-001 appeared to meet the requirements of the contract documents however, DP-053-001 U-Rib #126/14 weld W10 exhibited one area of incomplete fusion approximately 10mm in length. ZPMC elected to grind the affected area to sound metal and repair by GMAW welding using gantry 1. This repair was performed without an approved repair procedure. QA informed ZPMC QC CWI identified as Wang Yan hua that an incident report would be generated for this discrepancy. QA noted that according to ZPMC CWI identified as Wang Yan hua, ZPMC did not perform Magnetic particle Testing (MT) of the excavated area prior to performing the repair weld as they have on past deck panels with similar issues..

Following the repair QA and QC monitored the GMAW welding process continuously throughout the evening. QA partially completed a production panel welding report for the above mentioned panels. The report is on file in the Caltrans QA office. The welder identifications and welding parameters as measured with the calibrated gages

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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on the machines appeared to be in conformance with the posted WPS's and are as follows:

GMAW (DP-053-001)

Volts: 29.8 – 30.9 Amps: 361 – 376 Travel Speed: 530 mmpm

SAW (DP-053-001)

Volts: 24 – 25.3 Amps: 665 – 688 Travel Speed: 520 mmpm

Welder ID#'s

Weld joint 1: 059421

Weld joint 2: 059464

Weld joint 3: 059421

Weld joint 4: 059464

Weld joint 5: 059403

Weld joint 6: 059468

Weld joint 7: 059403

Weld joint 8: 059468

Weld joint 9: 059361

Weld joint 10: 062265

GMAW (DP-325-001)

Volts: 29.5 – 30.9 Amps: 355 – 378 Travel Speed: 530 mmpm

Welder ID#'s

Weld joint 1: 062265

Weld joint 2: 059361

Weld joint 3: 059468

Weld joint 4: 059403

Weld joint 5: 059468

Weld joint 6: 059403

Weld joint 7: 059464

Weld joint 8: 059421

QA's shift ended before ZPMC performed the SAW welds on panel DP-325-001.

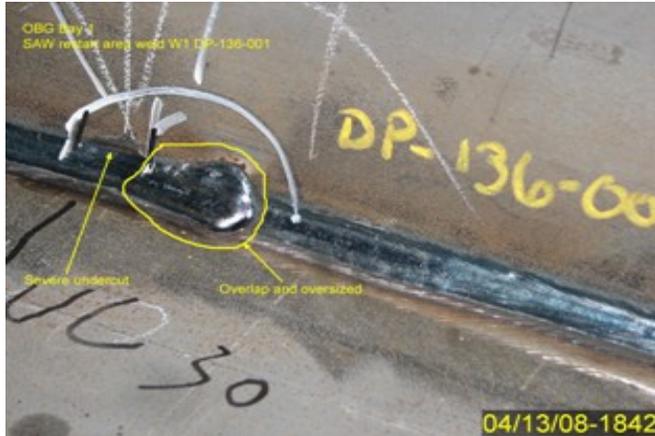
QA visually inspected completed welds on deck panel DP-136-001 welds W1, W2 and W3. All welds that were inspected appeared to exhibit some degree of lack of fusion, overlap, oversize and/or under fill. All of the Partial Joint Penetration (PJP) welds joining U-Rib to deck plate that have been inspected on this panel do not comply with the visual acceptance criteria specified in AWS D1.5 2002 and the contract documents. QA partially completed a Caltrans QA visual weld inspection report for the OBG deck panel mentioned above. The report is filed in the Caltrans QA office.

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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## Summary of Conversations:

as mentioned above.

## 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 Lowry (858)-344-2712, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Hall,Steven	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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