

**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-003941**Date Inspected:** 19-Sep-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:** Chen Chih-Ming**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:** Various (see below)**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 assembly bay 2

QA performed Phased Array Ultrasonic Testing (PAUT) in the tacked areas on u-rib to deck plate Partial Joint Penetration (PJP) welds after the contractor performed R1 repairs and conventional Ultrasonic Testing (UT) in the areas that previously exhibited crack like indications discovered by Caltrans QA using the PAUT method. This QA inspector performed 100 % PAUT of the entire length of each repaired area on the following deck panels:

DP-053-001: (PAUT)

Weld# 4 – 1 tack PAUT'ed – 0 indications non-compliant.

DP-054-001: (PAUT)

Weld# 1 – 4 tacks PAUT'ed – 1 indication non-compliant\*

Weld# 3 – \*\*\*\*

Weld# 8 – 1 tack PAUT'ed – 0 indications non-compliant

Weld# 9 – 2 tacks PAUT'ed – 1 indication non-compliant\*\*

Weld# 10 – 1 tack PAUT'ed – 0 indications non-compliant\*\*\*

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## WELDING INSPECTION REPORT

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\*DP-054-001 weld 1 “Y” location 4890mm / depth 10.31mm / dbs 11.8 / 4mm macroetch crack sample 5-6  
DP-564 reference dbs 16.2 / same location.

\*\*DP-054-001 weld 9 “Y” location 14500mm / depth 9.6mm / dbs 14.2 / 4mm macroetch crack sample 5-6  
DP-564 reference dbs 16.2 / same location.

\*\*\* DP-054-001 weld 10 “Y” location 7838mm not repaired by contractor.

\*\*\*\* DP-054-001 weld 3 “Y” location 700mm has not been repaired by the contractor due to the fact that an external diaphragm has been fit in this location.

NOTE: The following are the dbs reference levels obtained from known cracks in two macroetch samples and a 1mm side drilled hole at 12mm of depth:

1mm side drilled hole at 12mm of depth: 21.6 dbs.  
2mm macroetch crack sample 5-9 DP-564: 19.3 dbs.  
4mm macroetch crack sample 5-6 DP-564: 16.2 dbs.

NOTE: 2 Deck Panels were purchased by Caltrans for testing and initial UT and PAUT procedural development purposes. At this time no written PAUT procedure has been issued. However, all the test samples identified with the PAUT method as crack indications were confirmed after macro-etching and magnetic particle testing.

### Summary of Conversations:

Only general conversation was held between QA and QC concerning this project.

### 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 Ryan Smith, (858) 232-6799, 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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