

**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 #: 69.22P.A**WELDING WITNESS REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WWR-000302**Date Inspected:** 22-Jun-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**Witness:** **Procedure Qualification Record**  
**Welding** **NDT****Welder Qualification**  
**Mechanical Testing, describe:** Reduced Section Tension,  
Round All Weld Metal  
Tension, Groove Weld  
Macroetches, Charpy Vee  
Notch Testing, Side Bend  
Testing**Index Lot #:** B72-043-07**Bridge No:** 34-0006**Welder:** Zhang Xing Jin**Joint Description:** B-U2a**Base Metal:** A709-50F-2**Thickness:** 26 millimeters**Electrode Spec/Class:** AWS A5.20/E71T1-1**Backing Material:** A709-50F-2**Average Amps:****Average Volts:****Travel Speed:****Preheat:****Witness Lot #:** B26-019-07**Component:** Bid: 52,55 Tower & Girder**ID #:** N/A**N/A** **WPS ID #:** PWPS-B-T-2233 **N/A****N/A** **PQR ID #:** HP2007246-1 **N/A****N/A** **Process:** FCAW **N/A****N/A** **Positions:** Vertical up (3G) **N/A****N/A** **CWI:** Wei Huang **N/A****N/A** **AWS Code:** AWS D1.5 2002 **N/A****N/A** **Applicable Sec:** Paragraph 5.13 **N/A****N/A** **Heat Input:** **N/A****Summary of Items Observed:**

Mechanical Testing of ZPMC PQR HP2007246-1

The Caltrans QA Inspector is present at the ZPMC testing center as requested by ZPMC for the purpose of observing scheduled mechanical testing of specimens for a PQR identified as HP2007246-1. The Caltrans QA Inspector is accompanied by Caltrans Structures Construction representative Mr. Stan Ku, ABF representative Mr. Warren Buehler and Lu Jian Hua. The Caltrans QA Inspector observed that ZPMC has prepared reduced section specimens, standard all weld metal tension specimens, side bend specimens, charpy vee notch specimens and also macroetch specimens.

PQR HP2007246-1-Two Reduced Section Tension Specimens-

Specimen number BBW7246-1-1 was tested and recorded to have an ultimate tensile strength of 581MPa.

Specimen number BBW7246-1-2 was tested and recorded to have an ultimate tensile strength of 549MPa.

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## WELDING WITNESS REPORT

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### HP2007246-1-One Round All Weld Metal Tension Specimen

BBW7246-1-3 was tested and recorded to have an ultimate tensile strength of 601MPa and yield strength of 535MPa. The elongation was measured at 27%.

### HP2007246-1-Three Groove Weld Macroetch Specimens

Specimen numbers BBW7246-1-13, BBW7246-1-14 and BBW7246-1-15 have been observed and recorded as having no defects and thorough fusion to the steel backing bar and between adjacent layers of weld metal and base metal.

### HP2007246-1-Five Charpy Vee Notch Test Specimens

Specimen numbers BBW7246-1-4, BBW7246-1-5 and BBW7246-1-6, BBW7246-1-7 and BBW7246-1-8 have been tested at -30 degrees Celsius and were observed and recorded as having impact energy values of 106 Joules, 119 Joules, 125 Joules, 135 Joules and 104 Joules.

### HP2007246-1-Side Bend Test Specimens

Specimen numbers BBW7246-1-9, BBW7246-1-10, BBW7246-1-11 and BBW7246-1-12 have been observed and recorded as having no convex surface defects.

The tests identified within this report have been observed and recorded as being compliant with the test requirements as listed within AWS D1.5 (2002)table 4.1 for A709 Grade 345 material with a E71T-1 electrode. The contents of this report are supported by a Caltrans 6031 for this date.

### Summary of Conversations:

No conversations relative to the contents of this report.

### Observed welding,testing or results:

is in general conformance with the contract requirements.

is not in conformance with the contract requirements.

### 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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| <b>Inspected By:</b> | Cuellar,Robert | Quality Assurance Inspector |
| <b>Reviewed By:</b>  | McClary,David  | QA Reviewer                 |

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