

**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-000300**Date Inspected:** 11-Jul-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

**Fracture Critical**  
Specimens, Standard Round  
All Weld Metal Tension  
Specimen, Side Bend  
Specimens, Charpy Vee Notch  
Specimens and Macroetch  
Specimens

**Index Lot #:** B71-029-07a**Witness Lot #:** B26-028-07**Bridge No:** 34-0006**Component:** Bid: 52,55 Tower & Girder**Welder:** Xiang Jie**ID #:** N/A**Joint Description:** B-U2a-GF**N/A** **WPS ID #:** PWPS-B-T-2241-U-3 **N/A****Base Metal:** A709M Gr.50T2**N/A** **PQR ID #:** HP2007370 **N/A****Thickness:** 26 mm**N/A** **Process:** GMAW-Transfer mode **N/A****Electrode Spec/Class:** AWS 5.18/ER70S-6**N/A** **Positions:** 1-G **N/A****Backing Material:** A709M Gr.50T2**N/A** **CWI:** Xiang Wen Hui/ Xu Bing **N/A****Average Amps:****N/A** **AWS Code:** AWS D1.5 (2002) **N/A****Average Volts:****N/A** **Applicable Sec:** AWS 5.13 **N/A****Travel Speed:****N/A** **Heat Input:** **N/A****Preheat:****N/A****Summary of Items Observed:**

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 PQR identified as HP2007370. ABF representative Mr. Jeff Evans and Mr. Huang Wei are also present to witness the mechanical testing for this PQR test. 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. Included at the end of this report is a digital picture of these prepared specimens prior to testing.

Mechanical Testing of ZPMC PQR HP2007370 26mm Thick A709 Grade 345 Steel Plate

Two (2) Reduced Section Tension Specimens

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## WELDING WITNESS REPORT

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Specimen number BBW7370-1 was tested and recorded to have an ultimate tensile strength of 561 MPa.

Specimen number BBW7370-2 was tested and recorded to have an ultimate tensile strength of 558 MPa.

One (1) Round All Weld Metal Tension Specimen

BBW7370-3 was tested and recorded to have an ultimate tensile strength of 610MPa and yield strength of 523MPa. The elongation was measured at 22.8%.

Three (3) Groove Weld Macroetch Specimens

Specimen numbers BBW7370-13, BBW7370-14 and BBW7370-15 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.

Five Charpy Vee Notch Test Specimens

Specimen numbers BBW7370-4, BBW7370-5, BBW7370-6, BBW7370-7 and BBW7370-8 have been tested at -30 degrees Celsius and were observed and recorded as having impact energy values of 147 Joules, greater than 150 Joules, greater than 150 Joules, greater than 150 Joules and greater than 150 Joules.

Four (4) Side Bend Test Specimens

Specimen numbers BBW7370-9, BBW7370-10, BBW7370-11 and BBW7370-12 have been observed and recorded as having no convex surface defects.

The test results identified above have been observed and recorded as being compliant with the test requirements as listed within AWS D1.5 (2002) table 4.2 for A709 Grade 345 material with a Chinese electrode JM-56 (ER70S-6).

This 6032 report is 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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