

**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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000291**Date Inspected:** 10-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**CWI Name:** Huang Wei and Xu Bing**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:** N/A**Summary of Items Observed:**

The CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the welding qualification testing pertinent for the welding qualification records (PQRs) PQR HP2007249, PQR HP2007145-1, and PQR HP2007146-1 scheduled for this project. The QA inspector had a conversation with the ABF QA inspector Kevin Dye at the start of the shift. Mr. Dye relayed that after meeting with ABF QA Supervisor Nate Lindell, ABF resolved to reject the flux cored arc welding PQR-HP2007247-1 welded yesterday due to ZPMC welded over craters located at the weld stops without preparation or cleaning. ZPMC agreed. ZPMC relayed to the QA inspector that ZPMC was going to re-start PQR HP2007247-1 on another day.

ZPMC, welder Zhu Hai Ping was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-3214 for the PQR identified as HP2007249. Base metal was designated as A-709 Grade HPS485W (Heat # 06103565N). ZPMC followed the Production procedure WPS criteria (AWS 5.13) using the shielded metal arc welding (SMAW) process in the overhead (4G) position with the 4.0 mm diameter electrode designated as E7018-1, brand name THJ506Fe-1. The QA Inspector verified amperages, voltages, travel speeds, preheat and heat interpass temperatures. The QA inspector witnessed passes 1 through 12 (layers 1 thru 6). The QA inspectors performed random verifications of the welding parameters for a total of 12 passes. The QA inspector found that the welding parameters taken by ZPMC QC inspector Xu Bing appeared to be accurate and in accordance with the contract documents. PQR HP2007249 was completed welded on this date. The QA inspector performed a final visual inspection and observed that the weld reinforcement appeared to be in compliance with the contract documents. Caltrans lot # B71-032-07 was assigned to this PQR testing.

ZPMC, welder Zhu Hai Ping was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-3112 (fillet) or the PQR identified as HP2007145-1.

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Base metal was designated as A-709 Grade HPS485WT2/Z (Heat # 07101250N). ZPMC followed the Fillet weld WPS qualification criteria AWS D 1.5 Subsection 5.10 using the shielded metal arc welding (SMAW) process in the horizontal (2F) position with the 4.8 mm diameter electrode designated as E9018M H4R, brand name Excalibur. The QA Inspector verified amperages, voltages, travel speeds, preheat and heat interpass temperatures.

The QA inspector witnessed single pass on one side and multiple passes (3) on the opposite side of the Tee joint. The QA inspector performed random verifications of the welding parameters for a total of 4 passes. The QA inspector found that the welding parameters taken by Quality Control (QC) inspector Xu Bing appeared to be accurate and in accordance with the contract documents.

The QA inspector performed a final visual inspection and observed that the weld reinforcement appeared to be in compliance with the contract documents. Caltrans lot # B71-033-07 for the single pass and B71-034-07 for the multiple passes were assigned this PQR testing.

ZPMC, welder Zhu Hai Ping was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-3113 (fillet) or the PQR identified as HP2007146-1. Base metal was designated as A-709 Grade HPS485WT2/Z (Heat # 07101250N). ZPMC followed the Fillet weld WPS qualification criteria AWS D 1.5 Subsection 5.10 using the shielded metal arc welding (SMAW) process in the vertical (3F) position with the 4.0 mm diameter electrode designated as E9018M H4R, brand name Excalibur. The QA Inspector verified amperages, voltages, travel speeds, preheat and heat interpass temperatures. The QA inspector witnessed single pass on one side and multiple passes (2) on the opposite side of the Tee joint. The QA inspector performed random verifications of the welding parameters for a total of 3 passes. The QA inspector found that the welding parameters taken by Quality Control (QC) inspector Xu Bing appeared to be accurate and in accordance with the contract documents.

The QA inspector performed a final visual inspection and observed that the weld reinforcement appeared to be in compliance with the contract documents. Caltrans lot # B71-035-07 for the single pass and B71-036-07 for the multiple passes were assigned this PQR testing.

Note: The QA inspector witnessed when ZPMC opened containers with E9018M H4R Lincoln size 3/16 (4.8 mm) and 5/32 (4.0 mm) electrodes. The QA observed that the containers appeared to be hermetically seal containers as per contract documents.

### Summary of Conversations:

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

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<b>Inspected By:</b>	Acuna,Alfredo	Quality Assurance Inspector
<b>Reviewed By:</b>	McClary,David	QA Reviewer

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