

**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-002239**Date Inspected:** 31-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**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:** See below**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:** OBG/Tower**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Sherri Brannon arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions. While on site the QA Inspector observed and/or discovered the following.

**New Tower Shop****New Tower Shop:**

QA Inspector Brannon randomly observed ZPMC personnel performing heat straightening tower plate #P112(E) ZPMC report #HSR1 (T)-410, #P1866(W) ZPMC report #HSR1 (T)-329, and #P1274(E) ZPMC report #HSR1 (T)-381 cause for heat straightening mill induced distortion. Heat Straightening is performed by flame straightening by natural gas using a hand torch.

**Tower South Shaft Skin E:**

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Chen Xiao You ID 057286 and Mr. Zha Yong Song ID# 056134, tack welding joining SA16(S) to P149(S) weld joint SSD1 SA16-F/G-6B. Mr. Chen and Mr. Zha was observed welding in the 1G (flat) position utilizing a shielded metal arc welding (SMAW) process with a 5.0mm diameter electrode, filler metal brand E7018, class TL-508, manual. QA Inspector Brannon observed the ZPMC QC CWI Inspector Zhu Zhong Hai verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Zhu Zhong Hai to be: preheat temperature of 65°C and welding parameters amps of 214/204 respectively. Welding parameters observed by QA Inspector Brannon appear to be in

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general compliance with the approved WPS-B-P-2211-B-U3b.

OBG/Tower Sub Assembly Bay 2

77/144 Meter Mock-up:

QA Inspector Brannon randomly observed ZPMC personnel at the 77 Meter Mock-Up “trimming” the rough cut macroetch samples cut from the Mock-Up. 114 Meter Mock-Up- QA observed work this shift was idle.

OBG-Caltrans QA observed ZPMC is cutting the following 100 mm thick 345T2 plate material; P790 and P147 P789.

OBG/Tower Sub Assembly Bay 3

Bay 3 - Heat straightening:

QA Inspector Brannon randomly observed ZPMC personnel performing heat straightening side panel SP603. ZPMC report #HSR1 (B)-323, grid 5BE, welds #001~012, weld map SP603-001. Cause for heat straightening welding distortion. Heat Straightening is performed by flame straightening by oxygen acetylene using a hand torch.

Bay 3-OBG side/bottom panel:

QA Inspector Brannon randomly observed ZPMC qualified welder's, tack welding various T stiffeners plate to side and bottom panel, using a shielded metal arc welding (SMAW) process.

Bay 4 Tower 43 Meter Elevation:

QA Inspector Brannon randomly observed ZPMC welder Mr. Wu Zhi Bin ID #049804 welding fill pass's joining SA334 (E) to P1297 (E) weld joint # SSD1 SA334-10A/10B. Mr. Wu was observed welding in the 1G (flat) position utilizing a submerged arc welding (SAW) process with a 4.0mm diameter electrode, filler metal brand LA-85, class ENIS, machine. QA Inspector Brannon observed the ZPMC QC CWI Inspector Mr. Zhao Chen Sun verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Zhao Chen Sun to be: preheat temperature of 180°C and welding parameters amps of 640, volts of 30.6, and a travel speed of 500. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-3221-B-U3c-S-1.

New OBG Assembly Bay 2:

Welding was idle during this shift.

The following digital photograph below illustrates observation of the activities being performed.

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## Summary of Conversations:

No relevant conversations to report.

## 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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**Inspected By:** Brannon, Sherri

Quality Assurance Inspector

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**Reviewed By:** Cuellar, Robert

QA Reviewer