

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-009287**Date Inspected:** 30-Sep-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**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:** Tower and OBG Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 11

This QA Inspector randomly observed the following work in progress in Bay 11:

SMAW repair welding of weld joint ED1-SA183-18M-2-1B located on east tower. Welder was identified as 046704. ZPMC QC was identified as CWI Yu Dong Ping (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Li Jun, who was not a CWI. The weld number appeared on ZPMC CWR report Rev. 1, T-CWR 245 presented to this QA Inspector by ZPMC QC Inspector Li Jun. The welding variables recorded by QC1's assistant appeared to comply with WPS-485-SMAW-1G(1F)-repair listed on the above noted CWR. Also present at this location and appearing to be monitoring the welding and recording data was ABF Representative Xie Yan.

SMAW repair welding of weld joint ED1-SA183-28M-3-1B located on east tower. Welder was identified as 040733. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Li Jun, who was not a CWI. The weld number appeared on ZPMC CWR report Rev. 1, T-CWR 244 presented to this QA Inspector by ZPMC QC Inspector Li Jun. The welding variables recorded by QC1's assistant appeared to comply with WPS-485-SMAW-2G(2F)-repair listed on the above noted CWR. Also present at this location and appearing to be monitoring the welding and recording data was ABF Representative Xie Yan.

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SMAW repair welding of weld joint ED1-SA183-3M-2-1B located on east tower. Welder was identified as 046704. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Li Jun, who was not a CWI. The weld number appeared on ZPMC CWR report Rev. 0, T-CWR 307 presented to this QA Inspector by ZPMC QC Inspector Li Jun. The welding variables recorded by QC1's assistant appeared to comply with WPS-485-SMAW-2G(2F)-repair listed on the above noted CWR. Also present at this location and appearing to be monitoring the welding and recording data was ABF Representative Xie Yan.

SMAW welding of weld joint ESTL4-2L/L-53B located on PCMK east tower, lift 4, skins E to A, above the 143M diaphragm. Welder was identified as 040611. ZPMC QC was identified as CWI Liu Xiao Zhong (QC2). The welding variables recorded by QC2 appeared to comply with WPS-B-T-3212-TC-U4b-1.

FCAW welding of weld joints ESTL4-2K/L-38, 40 located on PCMK east tower, lift 4, diaphragm web to skin. Welder was identified as 042218. ZPMC QC was identified as QC3. The welding variables recorded by QC3 appeared to comply with WPS-B-T-4132.

While observing the welding operation located on PCMK east tower, lift 4, skin A, this QA Inspector also observed another welder create 2 arc strikes by dragging his welding stinger across stiffener A-3 approximately 1 meter from the top of the stiffener near the top of lift 4. This QA Inspector and QC3 both marked the area. QC3 assured this QA Inspector that each of the arc strikes would be ground and magnetic particle tested.

Bay 10

This QA Inspector randomly observed the following work in progress in Bay 10:

FCAW welding of weld joint SSTL4-1B/L-3B located on PCMK south tower, lift 4, skin A to skin E between diaphragms 116 and 119. Welder was identified as 040533. ZPMC QC was identified as CWI Li Ming (QC3). The welding variables recorded by QC3 appeared to comply with WPS-B-T-2232-TC-U4b-F.

FCAW welding of weld joint SSTL4-1B/L-5B located on PCMK south tower, lift 4, skin B to skin C between diaphragms 116 and 119. Welder was identified as 053869. ZPMC QC was identified as QC3. The welding variables recorded by QC3 appeared to comply with WPS-B-T-2232-TC-U4b-F.

Bay 9 – PMT

This QA Inspector monitored OBG Production Monitoring Test (PMT) #3064 for deck panels DP3064-001 and DP3052-001 at Gantry #2. Prior to the start of the PMT, the magnetic particle test (MT) of the tack welds was noted on the test panel as having been performed by ZPMC MT Inspector Jin Jianting on 9/30. The visual inspection of tack welds and root gap was performed by ABF Representative Cao Hai Zhou (ABF), ZPMC CWI Sun Bo (QC), and this QA Inspector. The start time for welding was approximately 0011 hours on 10/1/09 and the finish time was approximately 0041 hours. This QA Inspector randomly verified and documented the welding amperage, voltage, and travel speed during the gas metal arc welding (GMAW) and submerged arc welding (SAW) processes, welds 1 thru 6 at the completion of both the GMAW root pass and SAW cover pass. The welding variables recorded by QC appeared to comply with WPS-B-T-2342-U1-(U-rib)-4. The welds were

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visually inspected by ABF, QC and this QA Inspector. QC and ABF informed this QA Inspector that all six welds were acceptable and this QA Inspector concurred. This QA inspector randomly witnessed ZPMC ultrasonic testing (UT) inspector, identified as Ma Jilong, perform UT on each of the 500 mm test welds for depth of penetration and conformance. This QA Inspector selected fifteen designated locations for macroetch sampling per contract requirements. Each macroetch location was stamped by ZPMC personnel with the number 3064, the letter M positioned upside down, and an individual macroetch identifying number for each macroetch. After removal from each of the weld test specimens, polishing, and acid etching of the selected end, the macroetches were evaluated with a 7X optical magnifier and accepted by QC, ABF, and this QA Inspector.

All fifteen sample macros appeared to meet requirements and were noted to appear acceptable. See Caltrans U-ribs PMT Inspection Sheet, ZPMC production monitoring test plate inspection report, and Caltrans Macro Etch Log - all dated 10/1/2008 for additional information.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

Summary of Conversations:

No relevant conversations except 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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By:	Goulet,George	Quality Assurance Inspector
Reviewed By:	Dawson,Paul	QA Reviewer
