

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-009526**Date Inspected:** 06-Oct-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 welding of weld joint WD1-A6001-2-16 located on a west tower strut. ZPMC QC was identified as CWI You Qi Guo (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Cao Cheng, who was not a CWI. The welding variables recorded by QC1's assistant appeared to comply with WPS-B-T-3212-TC-U5b-1.

Bay 10

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

SMAW repair welding of weld joint NSD1-A5012-25-1A located on PCMK north tower strut. Welder was identified as 057258. ZPMC QC was identified as CWI Xu Le Feng (QC2). Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Sun Tian Liang, who was not a CWI. The welding variables recorded by QC2 and QC2's assistant appeared to comply with WPS-345-SMAW-1G(1F)-repair listed on ZPMC repair order T-WR2376.

SMAW repair welding of weld joint NSD1-A5012-31-1A located on PCMK north tower strut. Welder was

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identified as 057258. ZPMC QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Sun Tian Liang, who was not a CWI. The welding variables recorded by QC2 and QC2's assistant appeared to comply with WPS-345-SMAW-1G(1F)-repair listed on ZPMC repair order T-WR2377.

This QA Inspector randomly observed an arc strike near weld joint SSSL3-I/K-54 located on south tower, skin A near skin E, 109M diaphragm fit lug. This QA Inspector marked the arc strike with yellow paint. This QA Inspector informed QC2 of the arc strike. QC2 told this QA Inspector that the arc strike would be ground and magnetic particle testing performed on it.

Bay 9 – PMT

This QA Inspector monitored OBG Production Monitoring Test (PMT) #3014 for deck panels DP3014-001 and DP3058-001 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 10/6. The visual inspection of tack welds and root gap was performed by ABF Representative Lv Yun (ABF), ZPMC CWI Guo Yanfei (QC), and this QA Inspector. The start time for welding of the 3 – 20mm specimens was approximately 0017 hours on 10/7/09 and the finish time was approximately 0046 hours. This QA Inspector randomly verified and documented the welding amperage, voltage, and travel speed during the gas metal arc welding (GMAW) process, welds 1 thru 6 at the completion of the GMAW root pass. The welding variables recorded by QC appeared to comply with WPS-B-T-2342-U1-(U-rib)-4. The welds were visually inspected by ABF, QC and this QA Inspector. QC informed this QA Inspector that weld #5 was not acceptable because it displayed 270mm of overlap. Gantry #2 was moved to a new location where another test panel was already positioned for PMT testing.

This QA Inspector again began monitoring OBG Production Monitoring Test (PMT) #3014 for deck panels DP3014-001 and DP3058-001 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 10/6. The visual inspection of tack welds and root gap was performed by ABF Representative Lv Yun (ABF), ZPMC CWI Guo Yanfei (QC), and this QA Inspector. The start time for welding of the 3 – 20mm specimens was approximately 0059 hours on 10/7/09 and the finish time was approximately 0116 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 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 Tang Xingshan, 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 3014, the letter M, 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 generally comply with applicable contract documents and were noted to appear acceptable. See Caltrans U-ribs PMT Inspection Sheet, ZPMC production monitoring test plate inspection

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report, and Caltrans Macro Etch Log - all dated 10/7/2009 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
