

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-009226**Date Inspected:** 26-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:

SAW welding of weld joint ED1-SA183-23M-3-1A located on east tower. Welder was identified as 092195. ZPMC QC was identified as CWI Yu Dong Ping (QC1), but did not appear to be present. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Mao Bin Bin, who was not a CWI. The weld number was told to this QA inspector by ZPMC QC Inspector Mao Bin Bin, because the markings on the member were obscured by the SAW machinery. The welding variables recorded by QC1's assistant appeared to comply with WPS-B-T-3221-TC-U3c-S-1. Also present at this location and appearing to be monitoring the welding and recording data was ABF Representative Xie Yan.

SAW welding of weld joint ED1-SA183-43M-4-1A located on east tower. Welder was identified as 047304. ZPMC QC was identified as QC1, but did not appear to be present. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Mao Bin Bin, who was not a CWI. The weld number was told to this QA inspector by ZPMC QC Inspector Mao Bin Bin, because the markings on the member were obscured by the SAW machinery. The welding variables recorded by QC1's assistant appeared to comply with WPS-B-T-3221-TC-U3c-S-1. 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 various weld joints on member WD1-A6001-7 located on west tower strut. Welder was identified as 040668. ZPMC QC was identified as QC1, but did not appear to be present. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Mao Bin Bin, who was not a CWI. The welding variables recorded by QC1's assistants appeared to comply with WPS-485-SMAW-3G(3F)-FCM-repair-1.

This QA inspector was in Bay 11 at the above noted locations, which were approximately 20 meters apart, and did not observe QC1 between 2010 hours and 2115 hours. This QA inspector generated an incident report concerning this issue.

Bay 10

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

FCAW welding of weld joint SSTL4-4B/L-3A located on PCMK south tower, lift 4, skins A/E at the 121M level. Welder was identified as 040343. ZPMC QC was identified as CWI Liu Yang (QC2). Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Shi Jing Wei, who was not a CWI. The welding variables recorded by QC2 and QC2's assistant appeared to comply with WPS-B-T-2332-C-U2-F.

SMAW welding of weld joint SSTL4-1B/L-4A located on PCMK south tower, lift 4, skins A/B at the 136M level. Welder was identified as 057220. 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 Shi Jing Wei, who was not a CWI. The welding variables recorded by QC2 and QC2's assistant appeared to comply with WPS-B-B-2214-B-U2.

FCAW welding of weld joint SSTL3-1C/K-90 located on PCMK south tower, lift 3 at the 89M diaphragm. Welder was identified as 040333. ZPMC QC was identified as CWI Li Ming (QC3). The welding variables recorded by QC3 appeared to comply with WPS-B-T-3212-B-U2a-2.

FCAW welding of weld joint SSTL3-1C/K-54 located on PCMK south tower, lift 3, skin E. Welder was identified as 040533. ZPMC QC was identified as QC3. The welding variables recorded by QC3 appeared to comply with WPS-B-T-4333-TC-P4-F.

Bay 9 – PMT

This QA inspector monitored OBG Production Monitoring Test (PMT) #3053 for deck panels DP3053-001 and DP3029-001 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. The visual inspection of tack welds and root gap was performed by ABF Representative Lv Yun (ABF), ZPMC CWI Guo Yan Fei (QC), and this QA inspector. The start time for welding was approximately 0015 hours on 9/27/09 and the finish time was approximately 0042 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

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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 3053, the number 8, 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 9/27/2008 for additional information.

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

Summary of Conversations:

During the above noted performance of welding in Bay 11, this QA inspector asked ZPMC QC Inspector Mao Bin Bin where the CWI responsible for this welding was. ZPMC QC Inspector Mao Bin Bin told this QA inspector that QC1 was in the office.

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 Eric Tsang, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By:	Goulet, George	Quality Assurance Inspector
Reviewed By:	Carreon, Albert	QA Reviewer
