

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-009827**Date Inspected:** 16-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 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 joints SD1-STSA3-1-89M-1-3B, SD1-STSA3-1-89M-1-6B, SD1-STSA3-1-99M-1-3B, SD1-STSA3-2-99M-1-6B, SD1-STSA3-1-109M-1-3B located on PCMK south tower. Welder was identified as 202756. ZPMC QC was identified as CWI Li Lin (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Fu Wei Min, who was not a CWI. The welding variables recorded by QC1's assistant appeared to comply with WPS-B-T-4221-B-U3c-S-1.

SAW welding of weld joints SD1-SA3-16-109M-1-1A, SD1-SA3-16-109M-2-1A, SD1-SA3-16-109M-3-1A, SD1-SA3-16-109M-4-1A located on PCMK south tower. Welder was identified as 042195. 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 Yuan Wen Jie, who was not a CWI. The welding variables recorded by QC1's assistant appeared to comply with WPS-B-T-3221-TC-U5-S-1.

FCAW welding of weld joint ESTL4-2F/L-83 located inside PCMK east tower, lift 4, skin C, stiffener to fit lug at the top of 123M diaphragm. Welder was identified as 046706. ZPMC QC was identified as CWI Li Hong Fei (QC2). The welding variables recorded by QC2 appeared to comply with WPS-B-T-2333-TC-P4-F.

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

FCAW welding of weld joints ESTL4-2I/L-10, 12, 82 located inside PCMK east tower, lift 4, skin C, stiffener to fit lug at the bottom of 135M diaphragm. Welder was identified as 042218. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2333-TC-P4-F.

This QA Inspector observed 3 arc strikes on the top edge of stiffener C2 between diaphragm 131M and diaphragm 135M in east tower, lift 4. The area was marked and reported to QC1. See photos below.

FCAW welding of weld joint ESTL4-2K/L-12 located inside PCMK east tower, lift 4, skin C, stiffener to fit lug at the bottom of 143M diaphragm. Welder was identified as 049220. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2333-TC-P4-F.

Bay 9 – PMT

This QA Inspector monitored OBG Production Monitoring Test (PMT) #3013 for deck panels DP3013-001 and DP3069-001 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 Ding A Cheng on 10/16/09. The visual inspection of tack welds and root gap was performed by ABF Representative Wang Wan Shong (ABF), ZPMC CWI Sun Bo (QC), and this QA Inspector. The start time for welding of the 3–12mm x 20mm specimens was approximately 0017 hours on 10/17/09 and the finish time was approximately 0057 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 3013, 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 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 report, and Caltrans Macro Etch Log - all dated 10/17/2009 for additional information.

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

WELDING INSPECTION REPORT

(Continued Page 3 of 3)



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