

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-009527**Date Inspected:** 10-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 10

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

SMAW welding of weld joint ED1-A6001-7-7A located on PCMK east tower strut. Welder was identified as 052930. ZPMC QC was identified as CWI Tu Jun (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data were ZPMC QC Inspectors Li Peng Fei and Yuan Hui Gang, who were not CWI's. The welding variables recorded by QC1's assistants appeared to comply with WPS-B-T-3212-TC-U5b-1. Also present at this location and appearing to be monitoring the welding and recording data was ABF Representative Xie Yan.

FCAW welding of weld joints SSSL4-1C/L-146, 147 located inside PCMK south tower, lift 4, skin C fit lug to stiffener at 119M diaphragm. Welders were identified respectively as 057244, 057180. ZPMC QC was identified as Wang Chuan Qing (QC2). The welding variables recorded by QC2 appeared to comply with WPS-B-T-4332-TC-P5-F.

Bay 11

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

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Match drilling of 18mm holes into skin E through 32mm holes in doubler plates using bushings on PCMK west tower, lift 1, multiple areas. Two ZPMC QC's in the area and observing the work were identified as You Qi Guo (QC3) and Liu Xiao Zhong (QC4).

During fit-up of skin C to PCMK east tower, lift 4, SMAW tack welding of the bottom of 123M diaphragm to skin B. Welder was identified as 205642. ZPMC QC was identified as QC3. Assisting QC3 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 welding variables recorded by QC3's assistants appeared to comply with WPS-B-T-4313-TC-P5. Also present at this location and appearing to be monitoring the welding and recording data was ABF Representative Zhang Xiong.

Also during fit-up of skin C to PCMK east tower, lift 4, SMAW tack welding of a fit-up plate, subsequently used for jacking, to skin C at approximately 124.5M level. Welder was identified as 205642. ZPMC QC was identified as QC3. Assisting QC3 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 welding variables recorded by QC3's assistants appeared to comply with WPS-B-T-2112. Also present at this location and appearing to be monitoring the welding and recording data was ABF Representative Zhang Xiong.

Bay 9 – PMT

This QA Inspector monitored OBG Production Monitoring Test (PMT) #3021 for deck panels DP3021-001 and DP3063-001 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 10/10/09. The visual inspection of tack welds and root gap was performed by ABF Representative Wang Wan Shong (ABF), ZPMC CWI Guo Yanfei (QC), and this QA Inspector. The start time for welding of the 3 – 20mm specimens was approximately 0014 hours on 10/11/09 and the finish time was approximately 0039 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 3021, the letter M positioned sideways, 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 10/11/2009 for additional information.

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

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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
