

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-006364**Date Inspected:** 29-Mar-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1845**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 645**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Wan Wen Zhong, Guo Yan Fei			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, George Goulet, randomly observed the following work in progress in Bay 10:

FCAW welding of weld joints SSD1-FASA3-1E/E-16A, 48A located on PCMK south tower, lift 3, skin A.

Welder was identified as 066674. ZPMC QC was identified as Wan Wen Zhong (QC1). The welding variables recorded by QC1 appeared to comply with WPS-B-T-2231-Tc-U5-F.

FCAW welding of weld joints SSD1-FASA3-1E/E-45A, 9A, 36A located on PCMK south tower, lift 3, skin A.

Welders were identified respectively as 040533, 066155, 057194. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2231-Tc-U5-F.

SAW welding of weld joint SSD1-FCSA3-1B/C-55A located on PCMK south tower, lift 3, skin C. Welder was identified as 207745. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2221-B-U3c-S-2. Assisting QC1 at this location and appearing to be monitoring the welding and recording the data was ZPMC QC Inspector Wang Hao, who was not a CWI.

Bay 9 – PMT

This QA Inspector, George Goulet, monitored OBG Production Monitoring Test (PMT) #1 for deck panels DP430-001 and DP375-001 at Gantry #2. Prior to PMT #1, the magnetic particle test (MT) of the tack welds was

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noted on the test panel as having been performed by ZPMC MT Inspector Cai Xin Xin. The visual inspection of tack welds and root gap was performed by ABF Representative Huang Wen Guang (ABF), ZPMC CWI Guo Yan Fei (QC2), and this QA inspector, George Goulet. The start time for welding of PMT #1 was approximately 0048 hours on Monday, 3/30/09. This QA Inspector, George Goulet, 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 welds were visually inspected by QC2 and rejected by QC2 for porosity in excess of AWS requirements in both welds 2 and 6. QC2 and ABF informed this QA Inspector, George Goulet, that PMT #1 was rejected and another PMT would be performed.

This QA Inspector, George Goulet, monitored OBG Production Monitoring Test (PMT) #2 for deck panels DP430-001 and DP375-001 at Gantry #2. Prior to PMT #2, the magnetic particle test (MT) of the tack welds was noted on the test panel as having been performed by ZPMC MT Inspector Sun Gong Chang. The visual inspection of tack welds and root gap was performed by ABF Representative ABF, QC2, and this QA inspector, George Goulet. The start time for welding of PMT #2 was approximately 0117 hours on Monday, 3/30/09 and the finish time was approximately 0150 hours. This QA Inspector, George Goulet, randomly verified and documented the welding amperage, voltage and travel speed during the 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 welds were visually inspected by ABF, QC2 and this QA Inspector, George Goulet. QC2 and ABF informed this QA Inspector, George Goulet, that all six welds were acceptable and QA inspector concurred. This QA inspector randomly witnessed ZPMC ultrasonic testing (UT) inspector, identified as Xu Wei, perform UT on each of the 500 mm test welds for depth of penetration and conformance. This QA Inspector, George Goulet, selected fifteen designated locations for macroetch sampling per contract requirements. Each macroetch location was stamped by ZPMC personnel with the number 430, the letter H, and an individual macroetch identifying number for each macroetch. After removal from each of the weld test specimens and polishing of the selected end, the macroetches were evaluated with a 7X optical comparator and a 10X optical comparator and accepted by QC2, ABF, and this QA Inspector, George Goulet.

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 3/30/2008 for additional information.

Summary of Conversations:

As noted above, and this QA Inspector, George Goulet, asked each QC if all the welding variables observed by him appeared to comply with the appropriate WPS, including the preheat requirements according to thickness of the thickest member being welded. Each QC showed this QA Inspector, George Goulet, that he was carrying the proper temperature sticks to monitor the minimum and maximum preheat and interpass temperatures and replied that all he observed did appear to comply.

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.

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Inspected By: Goulet, George

Quality Assurance Inspector

Reviewed By: Carreon, Albert

QA Reviewer