

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-001733**Date Inspected:** 11-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei**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:** OBG Deck Panels**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Sherri Brannon arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions. While on site the QA Inspector observed and/or discovered the following.

Bay 1-OBG Deck Panels (Gantry 1):

QA Inspector Brannon observed the Production Monitoring Test (PMT) U-rib welding and welding for Production Panel DP077-001 and DP038-001, closed rib welds in Bay #1, Gantry 1. ZPMC welding operators performed gantry machine, gas metal arc welding (GMAW) for the root and submerged arc welding (SAW) for the cover pass. Qualified welders were observed welding in the 2G (horizontal) position utilizing gas metal arc welding (GMAW) process for the root pass with a 1.4mm diameter electrode, filler metal brand JM-56, class ER70S. ZPMC used a dual process WPS-B-T-2342-U1 (U-rib)-3 that was posted as the welding procedure specification (WPS) for closed U-rib to deck panel welding. The ambient temperature in bay #1 was recorded at 11 degrees Celsius prior to welding. The following weld joint and welders were recorded for the PMT U-rib welding and for production panel's DP077-001 and DP038-001. Weld joint (wj)-#1 Mr. Chen Jie ID#059468, wj-#2 Mr. Xiang Jie ID#059378, wj-#3 Mr. Gao Xin Dong ID#059361, wj-#4 Mr. Song Yin Shu ID#059421, wj-#5 Mr. Zhang Shao Hui ID#059403 and wj-#6 Mr. Mr. Xiang Huan Feng ID#059416.

Gantry operator was Mr. Ban Xiao Hui for GMAW and SAW process. QA Inspector Brannon observed tears and fins on weld joints prior to GMAW welding. Areas were shown to ZPMC personnel prior to welding. Note: The two deck panels had the GMAW root pass applied prior to having the PMT completed resulting in an incident report.

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Production Monitoring Test (PMT)

Welding started at 0830 and completed at 0832, the following welding variables were recorded at, amperage 350 to 370, voltage 30.5 to 31.2 with a travel speed of 535 mm/min for the GMAW. Welding started at 1317 and completed at 1319, the following welding variables of the (PMT) were recorded at, amperage 674 to 692, voltage 24.7 to 25.4 with a travel speed of 510 mm/min for the SAW. All three closed ribs were welded simultaneously weld joints 1~6.

Production panel DP077-001

Welding started at 0837 and completed at 0945, the following welding variables were recorded at, amperage 354 to 379, voltage 30.3 to 31.5 with a travel speed of 540 mm/min for the GMAW. Weld joints #1, 2, 5, 6, 9 & 10 were welded 1st and weld joint #3, 4, 7 & 8 were welded 2nd for the 5 rib panel. Welding started at 1340 and completed at 1459 for weld joints 1, 2, 5, 6, 9 & 10, the following welding variables were recorded at, amperage 673 to 692, voltage 24.4 to 25.6 with a travel speed of 510 mm/min for the SAW. Weld joints #1, 2, 5, 6, 9 & 10 were welded 1st and weld joint #3, 4, 7 & 8 were welded 2nd for the 5 rib panel. Note: QA Inspector Brannon noticed temporary bracing tacked at the run off tab.

Production panel DP038-001

Welding started at 1011 and completed at 1119, the following welding variables were recorded at, amperage 356 to 376, voltage 30.2 to 31.1 with a travel speed of 530 mm/min for the GMAW. Weld joints #1, 2, 5 & 6 were welded 1st and weld joint #3, 4, 7 & 8 were welded 2nd for the 4 rib panel. Welding started at 1512 and completed at 1544 for weld joints 1, 2, 5 & 6, the following welding variables were recorded at, amperage 676 to 681, voltage 25.1 to 25.6 with a travel speed of 520 mm/min for the SAW. Weld joints #1, 2, 5 & 6 were welded 1st and weld joint #3, 4, 7 & 8 had not started prior to the end of this shift. Note: QA Inspector Brannon noticed temporary bracing tacked at the run off tab.

Bay 1-OBG Deck Panels (Gantry 2):

QA Inspector Brannon observed the Production Monitoring Test (PMT) U-rib welding and welding for Production Panel DP44-001, closed rib welds in Bay #1, Gantry 2. ZPMC welding operators performed gantry machine, gas metal arc welding (GMAW) for the root and submerged arc welding (SAW) for the cover pass. Qualified welders were observed welding in the 2G (horizontal) position utilizing gas metal arc welding (GMAW) process for the root pass with a 1.4mm diameter electrode, filler metal brand JM-56, class ER70S. ZPMC used a dual process WPS-B-T-2342-U1 (U-rib)-3 that was posted as the welding procedure specification (WPS) for closed U-rib to deck panel welding. The ambient temperature in bay #1 was recorded at 11 degrees Celsius prior to welding. The following weld joint and welders were recorded for the PMT U-rib welding and for production panel DP44-001. Weld joint (wj)-#1 Mr. Xu Guo Yin ID#059443, wj-#2 Mr. Jiang Ting Guang ID#062265, wj-#3 Mr. Han Chang Hou ID#059464 and wj-#4 Mr. Yuan Feng ID#059355. Gantry operator was Mr. Li Xi De for GMAW and SAW. QA Inspector Brannon observed tears and fins on weld joints prior to GMAW welding. Areas were shown to ZPMC personnel prior to welding.

Production Monitoring Test (PMT)

Welding started at 0809 and completed at 0811, the following welding variables were recorded at, amperage 351 to 375, voltage 29.9 to 30.6 with a travel speed of 530 mm/min for the GMAW. Welding started at 1254 and completed at 1256, the following welding variables of the (PMT) were recorded at, amperage 674 to 680, voltage 24.9 to 25.5 with a travel speed of 505 mm/min for the SAW. The two closed ribs were welded simultaneously

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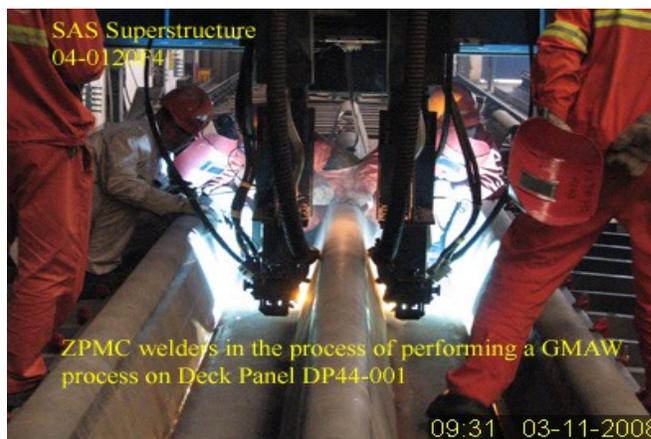
weld joints 1~4.

Production panel DP44-001

Welding started at 0833 and completed at 0942, the following welding variables were recorded at, amperage 354 to 376, voltage 29.1 to 30.3 with a travel speed of 530 mm/min for the GMAW. Weld joints #1, 2, 5 & 6 were welded 1st and weld joint #3 & 4 were welded 2nd for the 3 rib panel. Welding started at 1312 and completed at 1428, the following welding variables were recorded at, amperage 669 to 686, voltage 24.7 to 25.8 with a travel speed of 505 mm/min for the SAW. Weld joints #1, 2, 5 & 6 were welded 1st and weld joint #3 & 4 were welded 2nd for the 3 rib panel. Note: QA Inspector Brannon noticed temporary bracing tacked at the run off tab.

QA Inspector Brannon randomly observed ZPMC QC CWI Inspector Mr. Sun Wei monitoring welding parameters were in accordance with the above Welding Procedure Specification (WPS).

The following digital photograph below illustrates observation of the activities being performed.



Summary of Conversations:

No relevant conversations on this date.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Brannon, Sherri

Quality Assurance Inspector

Reviewed By: Cuellar, Robert

QA Reviewer