

**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-001804**Date Inspected:** 23-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**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**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Tim McClendon 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.

The Caltrans QA Inspector observed welding utilizing the dual process WPS-B-T-2342-U1 (U-rib)-3 welding procedure specification for closed rib welding of the Production Monitoring Test (PMT) #1 for Production Panel DP297-001 and DP081-001 on closed U-rib Partial Joint Penetration (PJP) welds in Bay #1. ZPMC welding personal performed Gantry Machine, Gas Metal Arc Welding (GMAW) for the root pass and immediately performed Gantry Machine, Submerged Arc Welding (SAW) for the cover/final pass on PMT #1, using gantry machine #1. Upon the completion of the SAW pass on PMT #1, Visual Testing (VT) was performed by ZPMC and was accepted then VT was performed by the Caltrans QA and was accepted. Ultrasonic Testing (UT) was then performed by ZPMC and Caltrans inspectors and PMT #1 was determined to be acceptable. Macro etch samples were selected by the Caltrans QA inspector on PMT #1. The following welders were observed welding the corresponding weld joints for PMT #1, weld joint (wj) #1 was welded by Mr. Xiaoag Huan Feng, wj #2 was welded by Mr. Xang Jie, wj #3 was welded by Mr. Gao Xin Dong and wj #4 was welded Mr. Zhong Sheuo Hui. Welding operator was Mr. Bi Ya Hui. The welding parameters were observed and recorded for each welder and the minimum and maximum welding variables of the PMT during GMAW are listed as follows, amperage 354 to 364 voltages 29.6 to 30.0 with a travel speed of 530 mm/min. The welding parameters were observed and recorded for each welder and the minimum and maximum welding variables of the PMT during SAW are listed as follows, amperage 679 to 683 voltages 24.8 to 25.5 with a travel speed of 520 mm/min.

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# WELDING INSPECTION REPORT

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After welding was completed on PMT #1, ZPMC personal performed welding utilizing the GMAW process on Production Panel DP297-001, on U-rib #U87 for wj #1 and wj #2, #U86 for wj #3 and wj #4 and, #U88 for wj #5 and wj #6. The following welders were observed welding production deck plate on closed U-ribs PJP welds, Mr. Xiaoag Huan Feng

welded wj #6, Mr. Xang Jie welded wj #5, Mr. Gao Xin Dong welded wj #4 and wj #2 and Mr. Zhang Shao Hui welded wj #3 and wj #1. The welding variables of the GMAW pass on production panel closed U-ribs PJP welds were observed and recorded for each welder. The minimum and maximum weld parameters are as follows, amperage 355 to 375, and voltage 30.1 to 30.5 with a travel speed of 537mm/min.

After GMAW welding was completed on Production Panel DP297-001, ZPMC personal performed welding utilizing the GMAW process on Production Panel DP081-001, on U-rib #U80 for wj #1 and wj #2, #U27 for wj #3 and wj #4 and, #U89 for wj #5 and wj #6. The following welders were observed welding production deck plate on closed U-ribs PJP welds, Mr. Xiaoag Huan Feng welded wj #6, Mr. Xang Jie welded wj #5, Mr. Gao Xin Dong welded wj #4 and wj #2 and Mr. Zhang Shao Hui welded wj #3 and wj #1. The welding variables of the GMAW pass on production panel closed U-ribs PJP welds were observed and recorded for each welder. The minimum and maximum weld parameters are as follows, amperage 344 to 363, and voltage 29.6 to 30.7 with a travel speed of 525mm/min.

After GMAW welding was completed on Production Panel DP081-001, ZPMC personal performed welding utilizing the SAW process on Production Panel DP297-001. The following welders were observed welding production deck plate on closed U-ribs PJP welds, Mr. Xiaoag Huan Feng welded wj #6, Mr. Xang Jie welded wj #5, Mr. Gao Xin Dong welded wj #4 and wj #2 and Mr. Zhang Shao Hui welded wj #3 and wj #1. The welding variables of the GMAW pass on production panel closed U-ribs PJP welds were observed and recorded for each welder. The minimum and maximum weld parameters are as follows, amperage 672 to 679, and voltage 24.6 to 25.3 with a travel speed of 520mm/min.

The ambient temperature in bay # 1 was recorded at 13 degrees Celsius with the production panel temperature recorded at 15 degrees Celsius prior to welding.

### Summary of Conversations:

No relevant conversations spoken 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 Pat Lowry, (858) 344-2712, who represents the Office of Structural Materials for your project.

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| <b>Inspected By:</b> | McClendon, Timothy | Quality Assurance Inspector |
| <b>Reviewed By:</b>  | Cuellar, Robert    | QA Reviewer                 |

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