

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-003964**Date Inspected:** 07-Sep-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**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 & OBG**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower and Orthotropic Box Girders (OBG).

OBG Bay 1:

The QA Inspector randomly observed 4 ZPMC helpers utilizing angle grinders to blend the GMAW 2F tack welds attaching U-Ribs to Deck Plate AE-DP595-001.

The QA Inspector randomly observed ZPMC Non-Destructive Testing (NDT) Technicians Cai Xin Xin and Wang Wei, utilizing the Magnetic Particle Testing (MT) Method to examine 100% of the GMAW 2F tack welds attaching U-Ribs to Deck Plate AE-DP595-001. There were a total of 28 indications located on 26 of 210 tack welds. The tack welds were examined while AE-DP595-001 was on Gantry 1 Jig; but not clamped down in negative camber. The ZPMC NDT Technicians marked the locations of the 28 indications on the U-Ribs. The QA Inspector with the assistance of QA Inspector William Clifford recorded all 28 indications and their "Y" locations. ZPMC QC informed the QA Inspector that AE-DP595-001 would be clamped down and placed in negative camber after lunch with MT performed again on 100% of the tack welds. The QA Inspector randomly observed an ABF QC Representative observing the 28 marked indications of the tack welds and recording on the steel which were apparently determined to be cracks or otherwise.

The QA Inspector returned to OBG Bay 1 at 1300 and randomly observed 1 ZPMC helper utilizing an angle grinder to blend the tapers on the 35 mm I-Ribs on Deck Plate AE-DP595-001. The QA Inspector also randomly

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observed several ZPMC helpers begin at 1330, to clamp down AE-DP595-001 placing it into negative camber. NDT Technicians Cai Xin Xin and Li Li Ming were randomly observed by the QA Inspector, beginning to perform MT of the tack welds on AE-DP595-001 at 1425. The QA Inspector left OBG Bay 1 at 1440 with MT still in progress on AE-DP595-001.

OBG Bay 2:

The QA Inspector randomly observed 6 ZPMC machine operators utilizing magnetic drills and templates, to place bolt holes in Tower Skin Plate Longitudinal Stiffener sections.

OBG Bay 3:

The QA Inspector randomly observed ZPMC welders Jia Anquan 201725 and Wang Hong Bo ID Number 203206, utilizing the Shielded Metal Arc Welding (SMAW) Process in the 2F (Horizontal Fillet) Position with ZPMC Weld Procedure Specification (WPS) WPS-2112-FCM, to tack weld T-Ribs to Side Plate SP365-001 Weld Joint (WJ) Numbers 014 through 018. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Wu Ming Kai, monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welders Chen Dingding ID Number 048923, Zhao Shuming ID Number 046819 and Xiao Di ID Number 203204, utilizing the SMAW Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-2112-FCM, to tack weld T-Ribs to Side Plate SP125-001 WJ Numbers 013 through 024. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Wu Ming Kai, monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welders Sun Ti Yu ID Number 054459, Liu Zihong ID Number 062447, and Li Shu Liang ID Number 048801, utilizing the FCAW Process in the 2F (Horizontal Fillet) Position on Gantry 1 with ZPMC WPS WPS-2132-3, to weld T-Ribs to Side Plate SP611-001. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Wu Ming Kai, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 296/303 amps, 30.2/30.4 volts (WJ's 042/043) for Mr. Sun; 294/303 amps, 30.3/29.8 volts (WJ's 045/046) for Mr. Liu and 301/295 amps, 30.2/30.2 volts (WJ's 049/050) for Mr. Li with a travel speed of 446 millimeters (mm) per minute for all 3 welders. The weld parameters appeared to comply with contract requirements.

OBG Bay 4:

The QA Inspector randomly observed ZPMC welders Meng Tao ID Number 068918 and Du Heng Hua ID Number 037779, utilizing the FCAW Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2132-2, to tack weld web plates to 33M Top(N) Tower Diaphragm SA318 at WJ's WSD1-SA318B/B-13 and 16. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Yu Dong Ping monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welders Wang Zhenghau ID Number 053753 and Dai Lu ID Number

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048659, utilizing the FCAW Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2132-2, to tack weld web plates to 43M Top(W) Tower Diaphragm SA234 at WJ's WSD1-SA234B/B-9 and 10. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Yu Dong Ping monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Hong Shuili ID Number 044815, utilizing the FCAW Process with a semi-automatic welding apparatus in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-T-2132-3, to weld Flange X136 to the outside edge of Floor Beam Wing Diaphragm FB079-001 at WJ 003. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Liu Wei Wei, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 311 amps, 31.5 volts with a travel speed of 420 mm per minute. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.



Summary of Conversations:

As noted in the above body of this report.

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 Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

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| Inspected By: | Franco,Charlie | Quality Assurance Inspector |
| Reviewed By: | Carreon,Albert | QA Reviewer |
