DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-001147
Date Inspected: 02-Jan-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1300
OSM Departure Time: 2330
Location: Shanghai, China

CWI Name:	Cui Yi Ru	**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 and Tower Mockup

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector Joe Lanz 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 during second shift. While on site the QA Inspector observed and/or discovered the following.

Bay 7

OBG Beams

The QA Inspector randomly observed ZPMC welding personnel Wang Chang Fa, ID #058102 tack welding floor beam stiffener to web fillet welds. The piece mark appeared to be FB007-04, weld numbers 013 and 014. The welding was performed in the 2F (horizontal) position utilizing the shielded metal arc welding (SMAW) process with a 4.0mm diameter electrode, filler metal appeared to be E7018, brand name TL-508. The QA Inspector periodically observed the ZPMC QC Certified Welding Inspector Cui Yi Ru monitoring the welding and the ZPMC QC Certified Associate Welding Inspector Wang Saifa verifying that the welding parameters and the minimum pre-heat of 20° Centigrade were in accordance with the Welding Procedure Specification WPS-B-P-2112-FCM. The QA Inspector observed that the preheat and welding parameters of 170 amps, 26.4 volts, 110 millimeters per minute travel speed measured by the QC Inspector appeared to be within the WPS ranges of 140 to 180 amps, 20 to 27 volts and 48 to 194mm per minuet travel speed. The welding parameters and work observed by QA Inspector appear to meet the minimum requirements in accordance with the WPS and contract documents.

The QA Inspector randomly observed ZPMC welding personnel Yang Xuhe, ID #057795 tack welding floor beam stiffener to web fillet welds. The piece mark appeared to be FB003-03, weld numbers 047 and 048. The welding was performed in the 2F (horizontal) position utilizing the shielded metal arc welding (SMAW) process with a 4. 0mm diameter electrode, filler metal appeared to be E7018, brand name TL-508. The QA Inspector periodically observed the ZPMC QC Certified Welding Inspector Cui Yi Ru monitoring the welding and the ZPMC QC Certified Associate Welding Inspector Wang Saifa verifying that the welding parameters and the minimum pre-heat of 20° Centigrade were in accordance with the Welding Procedure Specification WPS-B-P-2112-FCM. The QA Inspector observed that the preheat and welding parameters of 175 amps, 26.0 volts, 105 millimeters per minute travel speed measured by the QC Inspector appeared to be within the WPS ranges of 140 to 180 amps, 20 to 27 volts and 48 to 194mm per minuet travel speed. The welding parameters and work observed by QA Inspector appear to meet the minimum requirements in accordance with the WPS and contract documents.

The QA Inspector randomly observed ZPMC welding personnel Wang Li, ID 044772 tack welding Floor beam complete joint penetration splice. The piece mark appeared to be FB026-01, weld numbers 081 and 100. The welding was performed in the 1F (Flat) position utilizing the shielded metal arc welding (SMAW) process with a 4. 0mm diameter electrode, the filler metal appeared to be E7018, brand name TL-508. The QA Inspector observed ZPMC QC Certified Welding Inspector Cui Yi Ru monitoring the welding and the ZPMC QC inspector Xiang Feng Fong was verifying that the welding parameters and the minimum pre-heat of 20° Centigrade were in accordance with the Welding Procedure Specification WPS-B-P-2111. The QA Inspector observed that the preheat and welding parameters of 184 amps, 23.0 volts, 115 millimeters per minute travel speed measured by the QC Inspector appeared to be within the WPS ranges. The welding parameters and work observed by QA Inspector appear to meet the minimum requirements in accordance with the WPS and contract documents.

The QA Inspector randomly observed ZPMC welding personnel Wang Chang Fa, ID 058102 welding floor beam plate complete joint penetration weld FB025-02-081. The welding was submerged arc welding (SAW) and the approved welding procedure specification WPS-B-T-2221-L2c-S-1 in the 1G (flat) position. The filler metal and flux combination appeared to be JW-3C, 4mm diameter and JFB flux. The QA Inspector periodically observed the ZPMC QC Certified Welding Inspector monitoring the welding and a ZPMC QC Inspector verifying that the welding parameters and the minimum pre-heat were in accordance with the Welding Procedure Specification WPS-B-T-2221-U3c-S-1. The QA Inspector observed that the preheat of 20° Centigrade and welding parameters of 545 amps, 31.8 volts, 439mm per minute travel speed measured by the QC Inspector appeared to be within the WPS ranges. The welding parameters and work observed by QA Inspector appear to meet the minimum requirements in accordance with the WPS and contract documents with the following exception.

The QA Inspector randomly observed ZPMC welding personnel Hang Shui Li, ID #044815 and Yuan Wen Sang, ID #055491 welding floor beam FB016-01 stiffener 6mm fillet weld number 022 and 023. The welding was performed in the 2F (horizontal) position utilizing a semiautomatic gas shielded flux cored arc welding (FCAW-G) process. The QA Inspector observed ZPMC QC Certified Welding Inspector Cui Yi Ru monitoring the welding and the ZPMC QC inspector Xu Tao was verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification WPS-B-T-2132-1. The QA Inspector observed that the preheat and welding parameters of 299 amps, 29.3 volts and travel speed of 450mm per minute for Hong Shui Li and 297 amps, 29.5 volts and travel speed of 451mm per minute for Yuan Wen Song, measured by the QC Inspector appeared to be within the WPS ranges. The work observed by QA Inspector appears to meet the minimum requirements in accordance with the WPS and contract documents.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

At periodic intervals the QA inspector observed two ZPMC personnel taking flatness and straightness measurements of floor beam FB021-02-101. The ZPMC performed the measurements using two step wedges and a straight edge. The data was recorded in Chinese.

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

Summary of Conversations:

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

Inspected By:	Lanz,Joe	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer