

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-002000**Date Inspected:** 26-Apr-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Le Feng**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:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M, 114M, Orthotropic Box Girders (OBG) and Tower, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Item Description	WBS	Dwg No.	Status
1 U-rib	NA	NA	QA-UT

OBG Bay 1: Caltrans QA Inspector performed ultrasonic verification testing of u-rib complete joint penetration butt joint splice weld, identified as DP111-002-154 (U291), DP111-002-155 (U300), DP111-002-156 (U337) and DP111-002-157. The Ultrasonic Testing (UT) was performed to verify that 10% of the weld meets the requirements of the contract documents and AWS D1.5-2002. The weld and base metal were scanned utilizing a Krautkramer Branson USN 60. Caltrans QA Inspector performed a base metal lamination check using a 25mm diameter 2.25 MHz transducer and a shear wave scan was using a 19mm x 16mm 2.25 MHz transducer on a 70 degree angle wedge from face A. Caltrans QA Inspector utilized Scanning patterns A, B, C, and E. Caltrans QA Inspector found the welds inspected to be in compliance with AWS D1.5- 2002 Table 6.3 and the contract documents. See Caltrans Ultrasonic Testing Report (TL-6027), dated April 21, 2008 for additional information. The following digital picture illustrates deck plate u-rib splice weld.

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- 2 Tower Skin Plate NA NA Welding

New Tower Shop Bay 1: Caltrans QA Inspector observed ZPMC performing submerged arc welding (SAW), tower skin plate SA16, P149, P151, P150, P123, P124 and P661, root weld pass. The plates are joined to form one continuous weld. That is identified as SSD1-SA16 F/G- 1, SA8, 7A, 3, 109A, 110 and 112A The suffix A letter designates that the weld is a complete joint penetration weld (CJP) and the weld number without the A suffix is a partial joint penetration (PJP) weld. The welder operator is identified as Ms. Chen Hong Xia, welder stamp 040460, welding fill pass weld, weld 110 and 112A, utilizing welding procedure WPS-B-T-2221-B-U3c-S and WPS-B-T-2321-B-P3-S. Caltrans QA measured current welding parameters at approximately 690 amps, 33.0 volts and 630mm/min (millimeters per minute) travel speed. Caltrans QA verified preheat and interpass temperatures during the welding activities. The preheat temperature prior to the start of welding measures more than 110 degrees Celsius but less than 230 degrees Celsius during maximum interpass temperature verification. Caltrans QA observed, American Bridge/Fluor (ABF) inspector, Mr. Li Hanjie and ZPMC QC/CWI inspector, Mr. Xu Le Feng monitoring the activities at the work station. The following digital picture illustrates welding in progress.



- 3 Closed Rib Deck Panel U-ribs NA NA Welding

OBG Bay 1: Caltrans QA observed ZPMC shop workers performing fitup and tack welding, closed u-ribs to deck plate, assembly identified as DP111-001. The tack welders were identified as Mr. Liu Xiaomin, welder stamp #059393 and Mr. Xiao Bianbin, welder stamp #059440, utilizing welding procedure WPS-B-T-2342-U2 (rib), revision 0. Caltrans QA also observed the welding the of closed u-rib complete joint penetration (CJP) splice weld, subassembly u-rib identified as DP113-001-157. The welder is identified as Mr. Song Yin Shu, welder stamp #059421, utilizing welding procedure WPS-B-T-2233-B-U2-F, revision 1. Caltrans QA observed ZPMC QC inspector, Mr. Li Yan hua monitoring the welding activities at the workstations.

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Summary of Conversations:

As identified within the contents 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 Patrick Lowry, (858) 344-2712, who represents the Office of Structural Materials for your project.

Inspected By:	Hasler, Mike	Quality Assurance Inspector
Reviewed By:	Cuellar, Robert	QA Reviewer
