

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-001052**Date Inspected:** 17-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhang Lei**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 Mockups**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 2

89 Meter Mockup Subassembly SA42, Drawing MUSB-MA21:

The QA inspector performed ultrasonic verification testing of complete joint penetration welds on piece mark SA42-1, weld number 3 and piece mark SA42-2, weld number 4. The ultrasonic testing (UT) was performed to verify the weld and testing meet the requirements of the contract documents and AWS D1.5-2002. The base metal lamination check was performed with a 1.0" dia. round 2.25 MHz transducer. The bottom quarter and middle half shear wave scan was performed with a 0.75" x 0.625" 2.25 MHz transducer on a 70 degree angle wedge from face A and B. The top quarter shear wave scan was performed with a 0.75" x 0.625" 2.25 MHz transducer on a 45 degree angle wedge from face A and B. Scanning patterns A, B, C, and E were utilized. Following is a list of welds examined and acceptance in accordance with AWS D1.5-2002 table 6.3 and the contract documents.

a) SA42-1, weld 3, 75mm thick, Y location = 200mm, Length tested = 150mm.

b) SA42-2, weld 4, 75mm thick, Y location = 200mm, Length tested = 150mm.

The QA noted the NDT that was performed by ZPMC personnel Li Li Ming and the welds were not marked in accordance with AWS D1.5-2002 section 6.19 which states an X line, a Y location and the piece mark will be marked on face A. A nonconformance report was issued previously.

The QA inspector concurred with the NDT level II technician's assessment. An Ultrasonic Test Report (TL-6027) for the welds that were tested was generated for this date.

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Bay 7

Floor plates

The QA inspector performed ultrasonic verification testing of floor plate complete joint penetration welds. The ultrasonic testing (UT) was performed to verify the welds and testing performed 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 for the following scans. The base metal lamination check was performed with a 1.0" dia. round 2.25 MHz transducer. The weld shear wave scan was performed with a 0.75" x 0.625" 2.25 MHz transducer on a 70 degree angle wedge from face A. Scanning patterns A, B, C, and E were utilized. Following is a list of welds examined and acceptance in accordance with AWS D1.5- 2002 table 6.3 and the contract documents.

- a) FB007-05-021, 12mm to 30mm thick, Y location unknown, Length tested = 500mm.
- b) FB007-06-021, 12mm to 30mm thick, Y location unknown, Length tested = 500mm.
- c) FB008-05-023, 12mm to 30mm thick, Y location = 0mm, Length tested = 500mm.
- d) FB008-04-023, 12mm to 30mm thick, Y location = 0mm, Length tested = 500mm.
- e) FB002-02-023, 12mm to 30mm thick, Y location = 0mm, Length tested = 500mm.

The QA noted the NDT that was performed by various ZPMC personnel, the welds were not marked in accordance with AWS D1.5-2002 section 6.19 which states an X line, a Y location and the piece mark will be marked on face A. A nonconformance report was issued previously.

The QA inspector did not concur with the NDT level II technician E Shui Lin's assessment of weld FB002-02-023.

The QA inspector reported a class A rejectable indication in this weld that was found acceptable by E Shui Lin. American Bridge/ Flour Quality Assurance representative Mr. Warren Buhler and Caltrans METS Lead Inspector Mr. Alfredo Acuna were notified of this issue and a Nonconformance Report (TL-15) was issued. An Ultrasonic Test Report (TL-6027) for the welds that were tested was generated for this date.

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



Summary of Conversations:

Relevant conversations are referenced 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.

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