

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-007430**Date Inspected:** 11-Jun-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**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:** OBG Fabrication**Summary of Items Observed:**

CWI Inspectors: Mr. Liu Fa Wen, Mr. Wuzhi Cheng

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

OBG Bay 5

This Caltrans Quality Assurance Inspector performed random Ultrasonic Testing (UT) of Traveler Rail Bracket welds. The configuration of these Traveler Rail Brackets prevents using normal AWS Ultrasonic transducer due the limited amount of scanning surface between the two flanges. After discussion with Caltrop Senior Task Leader Mr. Mahlon Lindenmuth it had previously been agreed that since use of a normal 0.63" x .075" sized 70 degree transducer is not feasible that a "nonstandard" 0.375" diameter 70 degree transducer can be used for this specific inspection. AWS D1.5 lists transducer sizes that can be used and this size is not listed as a normal size, therefore this examination is considered a "nonstandard" inspection. The QA Inspector calibrated this transducer using the normal AWS requirements and observed class "A" non conforming indications in welds TR1E-PP22-010 and TR1E-PP26-010. Weld TR1C-PP24-006 appears to comply with AWS D1.5 ultrasonic acceptance criteria. All of these weld locations appear to have been previously tested and accepted by ZPMC personnel. This Caltrans Quality Assurance Inspector observed that ZPMC had previously performed ultrasonic inspections of weld TR1B-PP19-004 and the base material where the ultrasonic transducer was placed to allow

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scanning of the weld has a layer of paint. See the photographs below for additional information. An incident report was issued to document the ultrasonic class "A" indications and that ZPMC personnel had performed ultrasonic inspections through a painted surface. This is a violation of AWS D1.5-2002, Paragraph 6.19.3. Note: On June 13, 2009 ZPMC representative Mr. Lay Tao requested that this QA Inspector perform followup ultrasonic inspections of the two welds that had been ultrasonically rejected. ZPMC ultrasonic inspection personnel provided their ultrasonic machine and related equipment and this QA Inspector verified the AWS calibration of ZPMC's ultrasonic equipment using a Caltrans IIW ultrasonic calibration block. The QA Inspector then scanned the two rejected locations of the Traveler Rail Bracket welds and this QA Inspector was not able to obtain a rejectable indication in the two welds with this equipment. Based on this examination the QA accepted these two welds. Mr. Lay Tao also informed this QA Inspector that even though weld TR1B-PP19-004 has dried ultrasonic couplant on the base material adjacent to the weld that ZPMC did not complete ultrasonic inspections of this weld. Based on this statement and after confirming that this traveler rail bracket is not identified by ZPMC as being ultrasonically accepted this QA Inspector is recommending that the previously issued incident report not be issued.

OBG Bay 13

The QA Inspector observed ZPMC welder Mr. Shi Jiabao, stencil 068494 is using flux cored welding procedure WPS-B-T-2132 to make fillet weld CSD4-PP64-003. The QA Inspector observed a welding current of approximately 315 amps and 30.0 volts. The QA Inspector observed Quality Control (QC) personnel monitoring this welding and QC has recorded a welding current of 307 amps and 30.2 volts. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Segment Assembly Area

This QA Inspector performed random magnetic particle (MT) inspection of FL3 floor beam horizontal stiffener attachment welds (edge plate 18A), where Caltrans Quality Assurance (QA) Inspector Mr. Rodney Patterson had observed longitudinal linear indications. An Incident report had previously been issued to document these linear indications and today this QA inspector observed the following welds appear to have been repaired and the following welds are MT acceptable; SSD12A-PP28-170, 171, 175, 176 and 183. For additional information on these inspections see the TL6028 Magnetic Particle Test Report.

Summary of Conversations:

See 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 Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
