

**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 #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-008632**Date Inspected:** 20-Aug-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Japan Steel Works**Location:** Muroan, Japan**CWI Name:** Chung Fu Kuan**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, Jacking, and Deviation Saddles**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication shop #4 and the Mechanical Test Lab at Japan Steel Works.

**Fabrication Shop #4:**

Weld Operation in-process on Middle Stiffeners of Saddle: Tower Saddle Segment T1-3

The QA Inspector observed the partial-joint penetration (PJP) tee-joint groove (root and fill pass) weld operation on the 2nd side of the middle stiffener plates to the rib (cast section) and the trough (cast section) of tower saddle T1-3. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the PJP groove weld operation that the minimum preheat temperature of 150 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. T. Watanabe (08-5169) on stiffener plate no's. 9ST-19, 9ST-20, 9ST-21 and Mr. M. Kato (08-5018) on stiffener plate no's. 9ST-22, 9ST-23, 9ST-24 were in compliance with WPS SJ-3012-8-1 per the SMAW process in the (1G) flat position using (4.0) mm diameter LB52 electrode. The QA Inspector observed that the PJP tee-joint groove (root and fill pass) weld operation on the 2nd side of the middle stiffener plates were in-process at the end of the QA Inspectors' shift.

Grinding Operation in-process on Saddle: West Deviation Saddle Segment W2-W3

The QA Inspector observed JSW personnel performing the grinding operation on the cover passes of the partial-joint penetration (PJP) groove welds on the stem plate (built-up section) to stem (cast section) of west deviation saddle segment W2-W3. The JSW personnel were grinding on the cover passes of the PJP groove welds to a visual acceptable profile prior to Quality Control (QC) Inspector Mr. Chung Fu Kuan performing a visual

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inspection for acceptance in accordance with the approved shop drawings and AWS D1.5-2002 Section 3.6. The QA Inspector observed that the grinding operation was in process on west deviation saddle segment W2-W3 at the end of the QA Inspectors' shift.

ABF-RFI-001811R00: Modified MC Shapes for East Saddle Rocker Bearing Plates E2-E1 and E2-W1

1) The QA Inspector observed (1) JSW welding personnel Mr. Y. Watanabe (73-3873) performing the fillet weld operation per the SMAW process in the (2F and 3F) horizontal and vertical positions on the (8) each JIS channel 3350 (150 \* 75 \* 75) fit-up to the modified Miscellaneous Channel (MC) shape (13 \* 31.8) for east saddle rocker bearing plate E2-W1. See ABF-RFI-001811R00 for the purpose of the modification on the MC shape. The fillet weld operation was performed on the web and bottom flange of the MC shape only at this time. The completion of the fillet weld operation to the top flange of the MC shape will be performed at a later date after the east saddle rocker bearing plate is repositioned. On this date, the QA Inspector observed that the total time spent performing the fillet weld operation on the JIS channel to the MC shape for east saddle rocker bearing plate E2-W1 was (8) hours for (1) JSW welding personnel. The QA Inspector also observed that ABF/JV Representative Certified Weld Inspector (CWI) Mr. Chung Fu Kuan was present during the fillet weld operation for a total time of (4) hours.

2) The QA Inspector observed the fit-up and tack-weld operation of the (8) each JIS channel 3350 (150 \* 75\* 75) to the MC shape (13 \* 31.8). The QA Inspector observed (1) JSW welding personnel Mr. K. Koyanagi (08-5144) performing and completing the tack-weld operation per the SMAW process in the (2F) horizontal position on the (8) each JIS channel 3350 (150 \* 75 \* 75) fit-up to the MC shape (13 \* 31.8) for east saddle rocker bearing plate E2-E1. On this date, the QA Inspector observed that the total time spent completing the fit-up and tack-weld operation was (8) hours for the (1) JSW personnel. The QA Inspector also observed that ABF/JV Representative Certified Weld Inspector (CWI) Mr. Chung Fu Kuan was present during the fit-up and tack-weld operation for a total time of (4) hours.

3) The QA Inspector observed (1) JSW welding personnel Mr. Y. Ohta (08-2017) performing and completing the fillet weld operation after east saddle rocker bearing plate E2-W1 was clamped down onto the fixture using the dog plate and wedge technique and the fillet weld operation was performed on the dog plates fit-up to the fixture around the perimeter of the (100) mm thick rocker bearing plate. On this date, the QA Inspector observed the total time spent completing the fillet weld operation was (8) hours. The QA Inspector also observed that CWI Mr. Chung Fu Kuan was present during the fillet weld operation of the dog plates fit-up to the fixture for a total time of (2) hours.

### Mechanical Test Lab:

The QA Inspector witnessed the mechanical test (tensile) of heat no. 08W263-1 for east saddle E2-E1. The (1) test specimen was prepared and tested after the stress relieved condition. The structural casting material grade was 345 and the tensile test specimen was 12.5 mm in diameter with a gage length of (50) mm. The QA Inspector observed that the results of the yield strength, tensile strength, elongation, and reduction of area on the tensile test specimen tested were in compliance with the table listed under the Castings section of the contract special provisions.

The QA Inspector also witnessed the mechanical test (Charpy-V-Notch) of heat no. 08W263-1 for east saddle E2-E1. The (3) test specimens were tested after the stress relieved condition and were dimensionally prepared within the tolerances in accordance with ASTM E-23 Figure 2 Izod (Cantilever-Beam) Impact Test Specimen,

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Type D. The (3) specimens were held at a temperature of (0) degrees Celsius for 10 minutes and temperature of the liquid bath was held to within plus or minus (1) degree Celsius. The (3) specimens were removed from the liquid bath and the test was conducted within the (5) second time frame allowed as per the requirements in ASTM E-23. The QA Inspector observed that the results of the individual impact tests and the average of the (3) specimens along with the lateral expansion measured of each specimen were in compliance with the table listed under the Castings section of the contract special provisions. Afterwards, the QA Inspector reviewed the test report for accuracy and completeness and assigned Caltrans Lot number B273-007-09.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with the applicable contract specifications.

**Summary of Conversations:**

No significant conversations were reported on this date.

**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 Nina Choy, 510 385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Peterson, Art	Quality Assurance Inspector
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<b>Reviewed By:</b>	Guest, Kittric	QA Reviewer
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