

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-007873**Date Inspected:** 15-Jul-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:** Muroran, 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 Foundry at Japan Steel Works.

**Fabrication Shop #4:**

PWHT Operation in process on Saddle: Tower Saddle Segment T1-2

The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that the final post weld heat treatment (stress relief) operation was being performed on tower saddle T1-2 on this date.

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

The QA Inspector observed the partial-joint penetration (PJP) and complete-joint penetration (CJP) weld operation respectively on the rib plate to the base plate of tower saddle T1-3. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the PJP and CJP weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. M. Matudate (08-5151) on weld joint no. 9Y-11L, Mr. H. Mitsumori (81-5438) on weld joint no. 9Y-9L, Mr. R. Kito (08-5174) on weld joint no. 9Y-10L-1, Mr. T. Sudo (03-3082) on weld joint no. 9Y-5L-1, and Mr. M. Yamashita (73-4195) on weld joint no. 9Y-5L-3 were in compliance with WPS SJ-3012-3 per the FCAW-G process in the (1G) flat position using (1.6) mm diameter TM55 electrode. The QA Inspector observed that the PJP and CJP groove weld operation was in process at the end of the QA Inspectors' shift.

NDT Operation pending completion on Saddle: West Deviation Saddle Segment W2-W1

---

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

---

The QA Inspector observed that the magnetic particle test (MPT) inspection (dry method) has been completed on the partial-joint penetration (PJP) groove welds and adjacent base metal of west deviation saddle W2-W1. The QA Inspector observed that there are areas marked up by Nikko Inspection Services (NIS) NDT QC Inspectors that will require rework- (grinding) to determine the extent of the rejectable indications detected. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-W1.

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

The QA Inspector observed JSW personnel performing the grinding operation on the partial-joint penetration groove (PJP) stem (plate section) to stem (cast section) weld W2S-2U prior to re-positioning west deviation saddle segment W2-W2 in preparation to change the location on the stem to stem PJP double bevel groove butt-joint weld operation. The change in location of the weld operation allows for the JSW welding personnel to be able to weld in a more ideal position. The QA Inspector observed that the grinding operation of the west deviation saddle segment was in process at the end of the QA Inspectors' shift.

### Foundry:

#### Weld Operation on Cast Saddle: East Saddle E2-E1 (cast saddle)

The QA Inspector observed the repair weld operation on excavated areas on the exterior of the saddle (opposite the ID side) on east saddle E2-E1. The QA Inspector observed Quality Control (QC) Representative Mr. T. Imai verify prior to and during the weld operation that the minimum preheat temperature of 150 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. K. Komai (06-8002) were in compliance with WPS SJ-3026-4 per the SMAW process in the (1G) flat position using (5.0) mm diameter E9016-G electrode. The QA Inspector observed that the repair weld operation was in process at the end of the QA Inspectors' shift.

#### NDT Operation on Saddle: East Saddle E2-W1 (cast saddle)

The QA Inspector observed Nikko Inspection Services (NIS) QC NDT personnel Mr. H. Kohama (#86) performing the magnetic particle test (MPT) inspection (wet method) on east saddle E2-W1 on the as finished surface after the final post weld heat treatment operation of level (1) areas on the exterior of the trough section and level (3) areas on the rib sections of the east saddle. The NIS QC NDT Inspector verified the lifting force of the yoke and the sensitivity of the yoke as per ASTM E709 prior to the start of the MPT inspection. The QA Inspector also verified that the bath concentration of the non-fluorescent particles were between (1.2 and 2.4) mL per (100) mL as per ASTM E709 Section 20.6.3 and the manufacturer recommendations. The actual settling volume was recorded at (2.2) mL as measured using a centrifuge tube with a (1.5) mL stem and after allowing the particles to settle for approximately (30) minutes prior to taking the settling volume measurement. The QA Inspector observed that the MPT inspection performed by Mr. H. Kohama was in process at the end of the QA Inspectors' shift.

#### Grinding Operation on Saddle: West Jacking Saddle (cast saddle)

The QA Inspector observed that JSW personnel were performing the grinding operation on the shaped areas on the outside of the trough section and on the rib sections where previously JSW personnel removed the excess cast material by the scarfing operation- (air-carbon-arc method) on the rough casting of the west jacking saddle. The purpose of the grinding operation is to profile the areas to a smooth finish and subsequently for the visual inspection and the NDT operation. The QA Inspector observed that the grinding operation was in process on the west jacking saddle at the end of the QA Inspectors shift.

---

---

# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

---

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.

---

<b>Inspected By:</b>	Peterson, Art	Quality Assurance Inspector
----------------------	---------------	-----------------------------

---

<b>Reviewed By:</b>	Guest, Kittric	QA Reviewer
---------------------	----------------	-------------