

**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-005842**Date Inspected:** 27-Mar-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Japan Steel Works**Location:** Muroran, Japan

<b>CWI Name:</b>	Chung Fu Kuan		
<b>Inspected CWI report:</b>	Yes	No	N/A
<b>Electrode to specification:</b>	Yes	No	N/A
<b>Qualified Welders:</b>	Yes	No	N/A
<b>Approved Drawings:</b>	Yes	No	N/A

<b>CWI Present:</b>	Yes	No	
<b>Rod Oven in Use:</b>	Yes	No	N/A
<b>Weld Procedures Followed:</b>	Yes	No	N/A
<b>Verified Joint Fit-up:</b>	Yes	No	N/A
<b>Approved WPS:</b>	Yes	No	N/A
<b>Delayed / Cancelled:</b>	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 at Japan Steel Works.

**Fit-up Operation of Stiffener plate between Rib Plates: Tower Saddle Segment T1-1**

The QA Inspector observed the fit-up operation of stiffener plate 7S-17 (150) mm thick between rib plate 7-9 and rib plate 7-8 and stiffener plate 7S-16 (150) mm thick between rib plate 7-5 and rib plate 7-8 on the (cast section) of tower saddle segment T1-1. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan was present during the fit-up operation. The QA Inspector observed that the fit-up operation was in process at the end of the QA Inspectors' shift.

**Machining of Steel Segment: West Deviation Saddle Segment W2-E2**

The QA Inspector observed that west deviation saddle segment W2-E2 was located in Machine Shop #2 to have the final machining performed. The JSW machinist was performing the milling operation on the inside of the trough section. The QA Inspector observed that the milling operation was in process at the end of the QA Inspectors' shift.

**Macro-etch of PJP welds: West Deviation Saddle Segment W2-E1 (After PWHT and Final Machining)**

The QA Inspector observed JSW personnel preparing to perform the macro-examination of the partial-joint penetration (PJP) groove welds on the cross-section of the rib (cast section) to rib (steel section) of west deviation saddle segment W2-E1. The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that JSW will perform the macro-etch examination to show the penetration of the shielded metal-arc welding root pass into the

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

rib (cast section). The surfaces will be prepared prior to the macro-etch examination by grinding and polishing the surface to provide visual evidence of the amount of penetration into the (cast sections') square edge of the double bevel groove weld. On rib 1-5, the QA Inspector previously located jagged linear indications by magnetic particle testing inspection tailing off of the exposed root face. On this date, after JSW personnel ground into the cross-section to remove the jagged linear indications and due to the amount of grinding, shown that the jagged indications opened up to visually show more of a cavity type indication than a jagged type indication which would be indicative of a slag inclusion that may have rolled behind the root pass during the welding operation (poor technique by welder). The QA Inspector observed that the preparation of the cross-section of the rib (cast section) to rib (steel section) PJP groove welds were in process at the end of the QA Inspectors' shift.

### Grinding operation of Steel Section: West Deviation Saddle Segment W2-E3 (After PWHT)

The QA Inspector observed JSW personnel performing the grinding operation on the rib plates and stem plate prepared edges' (face of bevels) of west deviation saddle W2-E3 (steel section). These areas to be prepared by grinding were difficult to be machined. The JSW personnel are grinding to the scribe lines (layout marks and punch marks of the final dimension of the groove area) prior to the fit-up operation of west deviation saddle W2-E3 (cast section) The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

### Machining of Steel Section: West Deviation Saddle Segment W2-W1 (After PWHT)

The QA Inspector observed that west deviation saddle segment W2-W1 is in Machine Shop #4 to have the root face dimension machined (partial-joint penetration groove welds) on the stem and ribs so the fit-up tolerances will meet the mill to bear surface requirements per the approved shop drawings and the contract specifications. The QA Inspector observed that no machining was performed on this date.

### Welding operation on Cast section and Steel to Cast Section: Tower Saddle Segment T1-2

The QA Inspector observed the partial-joint penetration groove weld operation on rib (steel section) to rib (cast section) of tower saddle segment T1-2. The QA Inspector observed QC Inspector Mr. Chung Fu Kuan verify prior to the start of the welding operation that the preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. M. Kashiwada (08-2008) on weld joint no. 8Y-7U and Mr. T. Kawakami (08-5079) on weld joint no. 8Y6U were in compliance with WPS SJ-3012-4 per the SMAW process in the (2G and 3G) horizontal and vertical position. The QA Inspector observed that the welding operation was in process at the end of the QA Inspectors' shift.

### Fit-up operation pending of Steel Section: West Deviation Saddle Segment W2-W2

The QA Inspector observed previously that (3) rib plates on each side of the stem plate were fit-up and tack-welded to the base plate on west deviation saddle (steel section) W2-W2. The QA Inspector observed that no work was performed on this date on west deviation saddle (steel section) W2-W2.

### Fit-up operation pending of Steel Section to Cast Section: Tower Saddle Segment T1-3

The QA Inspector observed that tower saddle (steel section) T1-3 is ready to be fit to tower saddle (cast section) T1-3. On this date, JSW welding personnel are performing the buttering operation (multiple surface weld layers) on rib (cast section) 9Y-12U-1 and 9Y-8U on the square edge for the full length and width of the rib. The fit-up of tower saddle (steel section) T1-3 to tower saddle (cast section) T1-3 will be performed at a later date. The Caltrans METS QA Inspector Mr. Mike Brcic is monitoring the buttering operation on rib (cast section) 9Y-12U-1 and rib

---

---

# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

---

(cast section) 9Y-8U of tower saddle T1-3 on this date.

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

**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>	Lanz, Joe	QA Reviewer
---------------------	-----------	-------------