

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-006341**Date Inspected:** 21-Apr-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**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 and the Foundry shop at Japan Steel Works.

**Fabrication Shop #4**

Machining Operation of Saddle: Tower Saddle Segment T1-1 (cast welded to steel section)

The QA Inspector observed that tower saddle segment T1-1 is located in Machine Shop #4 to have the final machining performed. The QA Inspector observed JSW personnel milling the base plate to final dimensions on this date.

Machining Operation of Saddle: West Deviation Saddle Segment W2-E2 (cast welded to steel section)

The QA Inspector observed that west deviation saddle segment W2-E2 is located in Machine Shop #2. The QA Inspector observed that no machining was performed on this date.

Machining Operation of Saddle: West Deviation Saddle Segment W2-E1 (cast welded to steel section)

The QA Inspector observed that west deviation saddle segment W2-E1 is located in Machine Shop #2 to have the lifting lugs machined /milled off. The QA Inspector observed JSW personnel were still setting up the milling machine in preparation to start the machining operation to remove the lifting lugs.

Storage of Saddle: Tower Saddle Segment T1-3 (steel section)

The QA Inspector observed that tower saddle segment T1-3 (steel section) is located in Fabrication Shop #4 for

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storage until tower saddle segment T1-3 (cast section) is ready for the fit-up operation. The QA Inspector observed that no work was performed on this date.

Fit-up of Saddle: West Deviation Saddle Segment W2-E3 ( cast section to steel section)

The QA Inspector observed JSW welding personnel Mr. R. Iizaka (06-2643) was preparing (preheating steel section to 160 degrees Celsius) to weld strong backs per the FCAW process in the (3G) vertical position to the end section of rib 6-17 (steel section). The Quality Control Inspector Mr. Chung Fu Kuan informed the QA Inspector that JSW uses their in-house weld procedure specifications to perform the welding of the strong backs on the end sections of the ribs. The QA Inspector observed that the preheat operation was still in process by the end of the QA Inspectors' shift.

Grinding Operation on Saddle: West Deviation Saddle Segment W2-W1 (steel section)

The QA Inspector observed that JSW personnel completed the thermal cutting operation on west deviation saddle segment W2-W1 (steel section). Afterwards, the JSW personnel were performing the grinding operation on the thermal cut surfaces to remove any loose scale and to grind the surfaces to bright metal. The QA Inspector observed that just the grinding operation was still in process at the end of the QA Inspectors' shift.

Post Weld Heat Treatment Operation of Saddle: Tower Saddle Segment T1-2 (cast section welded to steel section)

The QA Inspector observed that the partial-joint penetration groove weld operation on the stem plate (cast section) to stem plate (steel section) of tower saddle segment T1-2 was completed. The QA Inspector was informed by Quality Control Inspector Mr. Chung Fu Kuan that the next operation to be performed on tower saddle segment T1-2 is the post weld heat treatment operation. The QA Inspector observed that no work was performed on this date.

Welding Operation on Saddle: West Deviation Saddle Segment W2-W2 (steel section)

The QA Inspector observed that no welding was performed on the partial-joint penetration groove weld operation of the stem plate to base plate, rib plate to stem plate or rib plate to base plate portion of west deviation saddle W2-W2 on this date.

Machining Operation of Saddle: Tower Saddle Segment T1-3 (cast section)

The QA Inspector observed that JSW personnel were performing the layout operation on tower saddle segment T1-3 in Machine Shop #4 prior to the machining of the square edges of the groove on the ribs and stems. Previously, JSW welding personnel performed the weld surfacing (buttering operation) on the square edges of the rib and stem of the saddle (cast section) per the SMAW process using E7016 electrode. The QA Inspector observed that the layout operation was in process at the end of the QA Inspectors' shift.

Foundry Shop:

Storage of Saddle: West Deviation Saddle Segment W2-W2 (cast section)

The QA Inspector observed that west deviation saddle segment W2-W2 (cast section) is located in the Foundry Shop for storage until west deviation saddle segment W2-W2 (steel section) is ready for the fit-up operation. The QA Inspector observed that no work was performed on this date.

Grinding Operation on Saddle: East Saddle E2-E1

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The QA Inspector observed that JSW personnel previously performed the grinding operation of the shaped areas on the outside of the trough section and on the rib sections where the excess removal of cast material- (scarfing operation by the air-carbon-arc method) on the rough casting was performed on east saddle E2-E1. The purpose of the grinding operation is to profile the areas to a smooth finish for the NDT operation. The QA Inspector observed that no work was performed on this date.

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

The QA Inspector observed that NIS QC NDT Personnel Mr. H. Kohama (#86) was performing ultrasonic test (UT) inspection on the rib section and trough section on the outside of east saddle E2-W1. The UT inspection was performed in accordance with Table 2 in ASTM A609M for ultrasonic testing quality level (1) for within (30) mm of the surface on areas as shown on the plans and ultrasonic testing quality level (3) on areas outside of (30) mm of the surface on areas as shown on the the plans. The areas inspected were marked with (300 x 300) mm grid lines on the outside of the trough for the purpose of tracking and guidance in scanning. The QA Inspector observed that the UT inspection was in process at the end of the QA Inspectors' shift.

### Storage of Saddle: West Deviation Saddle Segment W2-W1 (cast section)

The QA Inspector observed that west deviation saddle segment W2-W1 (cast section) was re-located from the storage lay-down yard to fabrication shop #4. The QA Inspector observed that no work was performed on the saddle segment (cast section) on this date.

### NDT Operation on Saddle: West Deviation Saddle Segment W2-W3 (cast section)

The QA Inspector observed JSW personnel performed and completed the cleaning operation- (blast cleaning) on west deviation saddle W2-W3 (cast section). The cleaning operation was performed prior to the start of the NDT operations (magnetic particle test and ultrasonic test) inspection. The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that the layout of the saddle segment (cast section) would be started the week of April 27th 2009.

### Machining Operation of Saddle: West Jacking Saddle (cast section)

The QA Inspector observed that the west jacking saddle (cast section) is located in Machine Shop #4 to have the rough machining of the base plate, inside of trough, and the end sections of the west jacking saddle. The QA Inspector observed that the machining operation was being performed on inside of the trough section surfaces of the west jacking saddle 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.

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**Inspected By:** Peterson, Art

Quality Assurance Inspector

**Reviewed By:** Lanz, Joe

QA Reviewer