

**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-007104**Date Inspected:** 08-Jun-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.

**Machine Shop #4:**

Machining Operation on Saddle: Tower Saddle Segment T1-1 (cast section 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. On this date, the QA Inspector observed that the interior of the south cable trough is being milled to final dimensions on the tower saddle segment.

**Fabrication Shop #4:**

Re-positioning of Saddle: Tower Saddle Segment T1-2 (steel section welded to steel section)

The QA Inspector observed that JSW personnel were re-positioning tower saddle segment T1-2 in preparation to change the location on the rib (cast section) to rib plate (steel section) partial-joint penetration double bevel groove butt-joint weld operation. The change in the location of the weld operation also allows for the JSW welding personnel to be able to weld in a more ideal position. The QA Inspector observed that the re-positioning of tower saddle segment T1-2 was in process at the end of the QA Inspectors' shift.

Cleaning Operation on Saddle: Tower Saddle Segment T1-3 (cast section welded to steel section)

The QA Inspector observed that the intermediate post weld heat treatment operation was completed on tower saddle segment T1-3. The next operation to be performed on the tower saddle is the blast cleaning operation.

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

The QA Inspector observed that west deviation saddle segment W2-E1 is located in Fabrication Shop #4. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-E1.

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

The QA Inspector observed that west deviation saddle segment W2-E2 is located in Fabrication Shop #4. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-E2.

## Machine Shop #4

Layout operation of Saddle: West Deviation Saddle Segment W2-E3 (cast section welded to steel section)

The QA Inspector observed that west deviation saddle segment W2-E3 is located in Machine Shop #4. The JSW personnel performed the dimensional inspection and verified the location of the rib and stem against the approved drawings. Afterwards, the JSW personnel scribed the assembly control lines on the edges of the ribs, stem and base plate for reference during machining. On this date, the QA Inspector observed that the layout operation was completed west deviation saddle segment W2-E3.

## Fabrication Shop #4

NDT Operation completed on Saddle: West Deviation Saddle Segment W2-W1 (cast section welded to steel section)

The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) performing the magnetic particle test (MPT) inspection (dry method) on the partial-joint penetration (PJP) groove welds on the rib (cast section) to rib plate (steel section) and the stem (cast section) to stem plate (steel section) of west deviation saddle segment W2-W1. On this date, the QA Inspector observed that the MPT inspection on the PJP groove welds of west deviation saddle segment W2-W1 was in process at the end of the QA Inspectors' shift.

## Machine Shop #4

Machining Operation of Saddle: West Deviation Saddle Segment W2-W2 (steel section)

The QA Inspector observed that west deviation saddle segment W2-W2 (steel section) is located in Machine Shop #2. The JSW personnel are preparing the west deviation saddle segment for the machining operation on the groove areas of the rib plates and stem plate prior to the fit-up operation of west deviation saddle segment W2-W2 (cast section). The QA Inspector observed that the JSW personnel were still preparing the west deviation saddle segment for the machining operation.

## Fabrication Shop #4

Buttering Weld Operation on Saddle: West Deviation Saddle Segment W2-W2 (cast section)

The QA Inspector observed the weld surfacing (buttering operation / build-up of weld metal) on the end section of the trough on west deviation saddle segment W2-W2 (cast section). The buttering operation is being performed at specific locations where the lifting lugs for positioning the saddle segment for the weld operation. The QA Inspector observed QC Inspector Mr. Chung Fu Kuan verify prior to the start and during the welding operation that the preheat temperature of 160 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. M. Inoue (92-5683) were in compliance with WPS SJ-3012-1-2 per the SMAW process in the horizontal and vertical positions using (5) mm diameter LB52A electrode. The QA Inspector observed that the

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buttering weld operation on the end section of the trough was in process at the end of the QA Inspectors' shift.

**Weld Operation of Saddle: West Deviation Saddle Segment W2-W3 (steel section being welded to steel section)**

The QA Inspector observed the partial-joint penetration groove tee-joint weld operation on the rib plate to stem plate of west deviation saddle W2-W3. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 160 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. M. Kato (08-5018) on weld joint no. 8Y-12V were in compliance with WPS SJ-3011-3 per the FCAW-G process in the (1G) flat position using (1.6) mm diameter TM95 electrode. The QA Inspector observed that the partial-joint penetration groove tee-joint weld operation was in process at the end of the QA Inspectors' shift.

**Tack-Weld Operation of Bearing Blocks to Rocker Bearing Plate Assembly: East Saddle E2-W1**

The QA Inspector observed that the tack-weld operation was completed on the bearing blocks- (piece mark no. 21-4) to the rocker bearing plate- (piece mark no. 21-1) of the rocker bearing plate assembly that will be anchored to the east saddle grillage for east saddle E2-W1. The tack weld operation was performed by JSW welding personnel Mr. T. Ohta (08-2017) using WPS SJ-3177-4 per the SMAW process in the (2F) horizontal position using (4.0) mm diameter LB52A electrode. On this date, the QA Inspector observed that no other work was performed on the rocker bearing plate assembly.

**Weld Operation on End Splay Cover Plate Assembly: East Saddle E2-E1**

The QA Inspector observed the complete-joint penetration groove weld operation on the (cover plate stiffener to base plate) of the end splay cover plate assembly for east saddle E2-E1. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. K. Kobayashi (08-5023) on stiffener plate 24-4 to base plate 24-1 were in compliance with WPS SJ-3177-1 per the SMAW process in the (1G) flat position using (4.0) diameter LB52 electrode. The QA Inspector observed that the complete-joint penetration groove weld operation was in process at the end of the QA Inspectors' shift.

**Foundry:**

**Storage of Saddle: West Deviation Saddle Segment W2-W3 (cast section)**

The QA Inspector observed that west deviation saddle segment W2-W3 (cast section) is located in the Foundry Shop for storage until west deviation saddle segment W2-W3 (steel section) is ready for the fit-up operation. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-W3 (cast section).

**Defect Removal on Saddle: East Saddle E2-E1 (cast saddle)**

The QA Inspector observed JSW personnel performing the gouging operation on the second side of the cast saddle by the air-carbon arc gouge method to remove rejectable indications located on the exterior of the trough section, stem section, and rib section at various locations along its length on east saddle E2-E1 (cast saddle). The rejectable indications were previously marked up by Nikko Inspection Services (NIS) QC NDT Personnel Mr. H. Kohama (#86) from the magnetic particle test (MPT) inspection and the ultrasonic test (UT) inspection performed on the exterior of the trough section, stem section and rib sections of east saddle E2-E1 (cast saddle). The QA Inspector observed that the gouging operation was in process on the trough section of the east saddle at the end of the QA Inspectors' shift.

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### Preheat Operation of Saddle: East Saddle E2-W1 (cast saddle)

The QA Inspector observed that the JSW personnel have located the east saddle E2-W1 to an area for the start of the repair weld operation on the excavated areas on the exterior of the trough, stem and rib sections of east saddle E2-W1. The JSW Representative Mr. Hideaki Kon informed the QA Inspector that JSW personnel are in process of preheating the saddle to a temperature of 150 degrees Celsius and the repair weld operation will probably start on the C shift on June 8th 2009. The QA Inspector observed that the preheat operation was in process at the end of the QA Inspectors' shift.

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

The QA Inspector observed that JSW personnel were performing the shaping (scarfing) operation- (removal of excess cast material on the rough casting) by the air-carbon arc gouge method on the exterior of the trough, stem and rib sections on the west jacking saddle to profile the trough, stem, and rib sections of the west jacking saddle to the proper shape, dimension and radius. The QA Inspector observed that the shaping operation was in process at the end of the QA Inspectors' shift.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with the 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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<b>Inspected By:</b>	Peterson, Art	Quality Assurance Inspector
<b>Reviewed By:</b>	Guest, Kittric	QA Reviewer

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