

**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-007151**Date Inspected:** 10-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

**Component:** Tower, Jacking, and Deviation Saddles

**Bridge No:** 34-0006**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:**

Grinding Operation of Saddle: Tower Saddle Segment T1-2 (steel section welded to steel section)

The QA Inspector observed the JSW personnel were performing the grinding operation around the radius of the cope holes- (weld access) after the partial-joint penetration (PJP) groove weld operation was completed on the rib plate to base plate and stem plate to base plate of tower saddle segment T1-2. The QA Inspector also observed that the JSW personnel were performing the grinding operation 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 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 at the end of the QA Inspectors' shift.

Staging around Saddle: Tower Saddle Segment T1-3 (cast section welded to steel section)

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# WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

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The QA Inspector was informed by Quality Control Inspector Mr. Chung Fu Kuan that the JSW personnel are preparing to build staging around tower saddle segment T1-3 for the NDT personnel to have access to perform the ultrasonic test (UT) inspection on the complete-joint penetration (CJP) rib (cast section) to rib (steel section) groove welds (9Y-5U-1, 9Y-5U-2, and 9Y-5U-3). On this date, the QA Inspector observed that the staging to be built around tower saddle segment T1-3 has yet to be started.

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

The QA Inspector was informed by Quality Control Inspector Mr. Chung Fu Kuan that Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) performed the magnetic particle test (MPT) inspection (dry method) on the end of partial joint penetration butt-joint groove weld no. E1Y-5U that was previously repaired on June 9, 2009 on west deviation saddle segment W2-E1. The QA Inspector observed on this date that no other 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

Machining Operation on 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 previously 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 (ACL) on the edges of the ribs, stem and base plate for reference points during machining. On this date, the QA Inspector observed that the machining operation has not started on west deviation saddle segment W2-E3.

## Fabrication Shop #4

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

The QA Inspector observed the JSW personnel performing the gouging operation to remove the excess weld material remaining on the rib (cast section) where the (2) lifting lugs were previously located on the outside surface of end rib (4-4). The QA Inspector observed that the gouging operation was in process on the outside surface of end rib (4-4) of west deviation saddle segment W2-W1.

NDT Operation on Saddle: West Deviation Saddle Segment W2-W2 (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) of the partial-joint penetration (PJP) groove welds on the rib plate to base plate, rib plate to stem plate, and stem plate to base plate of west deviation saddle segment W2-W2. The QA Inspector observed that the MPT inspection was in process on west deviation saddle segment W2-W2.

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 of the trough of end rib (5-17) was completed on west deviation saddle segment W2-W2 (cast section). The buttering operation was performed at (2) specific locations on end rib (5-17) where the lifting lugs will be welded for JSW personnel to position and re-position the saddle segment for the weld operation. On this date, the QA Inspector

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## WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

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observed that no other work was performed on west deviation saddle segment W2-W2 (cast section).

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

The QA Inspector observed the partial-joint penetration groove weld operation on the rib plate to stem plate and rib plate to base 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. Inoue (92-5683) on weld joint no. W3Y-11V- (plate 6-13 side), Mr. T. Watanabe (08-5169) on weld joint no. W3Y-12V- (plate 6-14 side), and Mr. T. Isobe (08-5176) on weld joint no. W3Y-17L-1 (outside of end rib) were in compliance with WPS SJ-3011-2 and 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 weld operation was in process at the end of the QA Inspectors' shift.

**Tack-Weld Operation on Miscellaneous Channel to Rocker Bearing Plate Assembly: East Saddle E2-W1**

The QA Inspector observed the tack-weld operation on the miscellaneous channel to the rocker bearing plate of the rocker bearing plate assembly that will be anchored to the east saddle grillage at location E2-W1. 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. Y Ohta (08-2017) tack-welding the miscellaneous channel to the rocker bearing plate were in compliance with WPS SJ-3177-4 per the SMAW process in the (1G) flat position using (4.0) mm diameter LB52A electrode. The QA Inspector observed that the tack-weld operation was in process at the end of the QA Inspectors' shift.

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

The QA Inspector observed the complete-joint (CJP) 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) welding on the 2nd side of double bevel groove 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) mm diameter LB52A electrode. The QA Inspector observed that the CJP 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 Cast Saddle: East Saddle E2-E1 (cast saddle)**

The QA Inspector observed JSW personnel performing the gouging / grinding 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).

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## WELDING INSPECTION REPORT

( Continued Page 4 of 4 )

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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 / grinding operation was in process on the trough section of the east saddle at the end of the QA Inspectors' shift.

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

The QA Inspector observed the repair weld operation on excavated areas on exterior of the trough (opposite the ID side) on east saddle E2-W1. The QA Inspector observed Quality Control (QC) Inspector 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. S. Morohashi (91-2255) and Mr. H. Onodera (93-2272) were in compliance with WPS SJ-3026-4 per the SMAW process in the (1G) flat position using (4.8) 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.

### 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- (19) mm carbon electrode 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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