

**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-006868**Date Inspected:** 21-May-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 of 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 inside of the south cable trough is being milled to final dimensions on the tower saddle segment.

**Fabrication Shop #4:**

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

The QA Inspector observed the partial-joint penetration groove (fill pass) weld operation on the rib plate (steel section) to base plate (steel section) of tower saddle T1-2. 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 weld joint no. 8Y-7L-1 and 8Y-7L-2 (plate 8-10 side) were in compliance with WPS SJ-3012-2 per the SMAW process in the (2G) horizontal position using (5.0) mm diameter E7016 electrode. The QA Inspector observed that the partial-joint penetration groove (fill pass) weld operation was in process at the end of the QA Inspectors' shift.

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## WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

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Re-positioning of Saddle: Tower Saddle Segment T1-3 (cast section being welded to steel section)

The QA Inspector observed that JSW personnel were re-positioning tower saddle segment T1-3 in preparation to change the location of the welding operation on the rib (cast section) to rib plate (steel section) partial-joint penetration double bevel groove butt joint welds and also for the JSW welding personnel to weld in a more ideal position. The QA Inspector observed that the re-positioning of the tower saddle was in process at the end of the QA Inspectors' shift.

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.

Machine Shop #2:

Machining Operation on 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 Machine Shop #2. On this date, the QA Inspector observed that no machining was performed on west deviation saddle segment W2-E2.

Fabrication Shop #4:

Grinding Operation on Saddle: West Deviation Saddle Segment W2-E3 (cast section welded to steel section)

The QA Inspector observed JSW personnel performing the grinding operation on the edge of the ribs at locations where the cutting operation- (propane torch) was previously performed to remove the temporary attachment - (stay plate) that was welded to the edge of the rib plates for dimensional and distortion control on west deviation saddle segment W2-E3. The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

Repositioning of Saddle: West Deviation Saddle Segment W2-W1 (cast section welded to steel section)

The QA Inspector observed that JSW personnel were re-positioning west deviation saddle segment W2-W1 in preparation to change the location of the welding operation on the rib (cast section) to rib plate (steel section) partial-joint penetration double bevel groove butt joint welding and also for the JSW welding personnel to weld in a more ideal position. The QA Inspector observed that the re-positioning of the west deviation saddle was in process at the end of the QA Inspectors' shift.

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

The QA Inspector observed that JSW personnel were performing the grinding operation around the radius of the cope holes after the completion of the partial-joint penetration groove weld operation on the rib plate to stem plate and rib plate to base plate of west deviation saddle segment W2-W2. The QA Inspector also observed that JSW personnel were grinding the finished welds to an acceptable profile prior to Quality Control (QC) Inspector Mr. Chung Fu Kuan performing a visual inspection in accordance with the approved shop drawings and AWS D1. 5-2002 section 3.6 (weld profiles) and Nikko Inspection Services (NIS) QC NDT Inspector Mr. M. Sato (#81) performing the magnetic particle testing (MPT) inspection on the completed partial-joint penetration groove welds in accordance with AWS D1-5-2002 section 6.7.6.2 and 6.26.2.2. The QA Inspector observed that the grinding operation around the cope holes and on the finished welds were in process at the end of the QA Inspectors' shift.

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 (root pass) weld operation on the rib plate (steel

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## WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

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section) to stem plate (steel section) of west deviation saddle segment 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. T. Watanabe (08-5169) on weld joint no. W3Y-6V (plate 6-4 and plate 6-8 side) were in compliance with WPS SJ-3011-4 per the SMAW process in the (3G) vertical position using (4.0) mm diameter E9018 electrode. The QA Inspector observed that the partial-joint penetration groove (root pass) weld operation was in process at the end of the QA Inspectors' shift.

### Machine Shop 2:

Layout Operation 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 Machine Shop #2. The JSW personnel are in preparation to perform dimensional inspection of the rib and stem sections of the west deviation saddle segment to verify the location and dimensions of the ribs and stem against the approved dimensional drawings and assembly control lines. The dimensional verification inspection is being performed prior to the fit-up operation of west deviation saddle segment W2-W2 (steel section). On this date, the QA Inspector observed that no inspection was being performed on west deviation saddle segment W2-W2 (cast section).

### 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).

NDT Operation pending on Saddle: East Saddle E2-E1 (cast saddle)

The QA Inspector observed that JSW moved the east saddle E2-E1 in the Foundry Shop to an area where the NDT inspection by the liquid penetrant test (PT) method, magnetic particle test (MPT) method and ultrasonic test (UT) method will be performed on the interior and exterior of the trough section and on the rib sections. The JSW personnel previously performed the scarfing operation by air-carbon-arc method to remove excess cast material on the rough casting of the saddle and subsequently the grinding operation to profile the areas to a smooth finish for NDT inspection. On this date, the QA Inspector observed that the NDT inspection has not started on east saddle E2-E1.

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

The QA Inspector observed Nikko Inspection Services (NIS) QC NDT Inspector Mr. H. Kohama (#86) performing the magnetic particle test (MPT) re-inspection of the excavated areas to ensure the complete removal of rejectable indications at locations on the outside of the trough section and rib sections of east saddle E2-W1 prior to the start of the repair weld operation. The rejectable indications were previously detected and marked up by Mr. Kohama during the liquid penetrant test (PT) inspection and the magnetic particle test (MPT) inspection of the excavated areas and afterwards the JSW personnel performed the grinding operation to remove the rejectable indications still present. The QA Inspector observed that the MPT re-inspection of the excavated areas were in process at the end of the QA Inspectors' shift.

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## WELDING INSPECTION REPORT

( Continued Page 4 of 4 )

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NDT Operation on Rough Machined Surfaces of Saddle: West Jacking Saddle (cast saddle)

The QA Inspector observed NIS NDT Inspector Mr. A. Seino (#82) performing magnetic particle testing (MPT) inspection (wet method) on the rough machined areas of the ribs and inside of the trough sections on the west jacking saddle. The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that the NDT method of liquid penetrant test (PT) inspection was completed earlier in the shift. The QA Inspector observed that the MPT inspection was in process on the rough machined surfaces of the 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
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<b>Reviewed By:</b>	Lanz, Joe	QA Reviewer
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