

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-006401**Date Inspected:** 23-Apr-2009**Project Name:** SAS Superstructure**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Contractor:** Japan Steel Works**OSM Arrival Time:** 730**OSM Departure Time:** 1630**Location:** Muroran, Japan**CWI Name:** Chung Fu Kuan**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** 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 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 JSW personnel were machining the end rib plate section of the saddle segment.

Machining Operation 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 Machine Shop #2. On this date, the QA Inspector observed that no machining was performed.

Machining Operation 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 Machine Shop #2 to have the lifting lugs machined /milled off. On this date, the QA Inspector observed JSW personnel were milling the lifting lugs off of the edge of the rib plates.

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. On this date, the QA Inspector observed that no work was performed on the (steel section) of the saddle segment.

Welding Operation of Saddle: West Deviation Saddle Segment W2-E3 (cast section joined to steel section)

The QA Inspector observed the partial-joint penetration groove weld operation on the rib plate (steel section) to rib plate (cast section) of west deviation saddle segment W2-E3. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the welding operation that the minimum preheat temperature of 160 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. S. Watanabe (08-5159) on weld joint no. E3Y-13U (plate 3-11 side and plate 3-15 side), Mr. T. Inoue (08-5163) on weld joint no. E3Y-14U and Mr. M. Matudate (08-5151) on weld joint no. E3Y-17U-1/-2 were in compliance with WPS SJ-3011-6/-7 per the SMAW process in the (2G) and (3G) horizontal and vertical positions using (4.8 and 4.0) mm diameter E9018M electrode, respectively. The QA Inspector observed that the partial-joint penetration groove weld operation was in process at the end of the QA Inspectors' shift.

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

The QA Inspector observed Nikko Inspection Services (NIS) QC Non-Destructive Testing (NDT) Inspector Mr. M. Sato (#81) performing magnetic particle testing (MPT) inspection (dry method) on the prepared edges (bevel faces) of the partial-joint penetration double bevel groove areas on the rib plates and stem plate of west deviation saddle segment W2-E1. The QA Inspector observed that the MPT inspection of the bevel faces on the ribs and stem were completed by the end of the QA Inspectors' shift.

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

The QA Inspector observed that no NDT inspection was performed on the partial-joint penetration (PJP) groove welds and the complete-joint penetration (CJP) groove welds on the rib plate (cast section) to rib plate (steel section) of tower saddle segment T1-2 during the QA Inspectors' shift. The QA Inspector was informed by Quality Control Inspector Mr. Chung Fu Kuan that the NDT inspection on the PJP and CJP groove welds would resume later on the "B" (second) shift.

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

The QA Inspector observed that JSW personnel were performing the grinding operation on one side of the partial-joint penetration double bevel groove T joint welds on the stem plate to base plate and the end rib plate to base plate of west deviation saddle W2-W2. The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

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

The QA Inspector observed that tower saddle segment T1-3 (cast section) is located in Machine Shop #4 to have the machining operation performed on the square portion (cast side) of the double bevel groove butt joint welds of the ribs and stems. Previously, JSW welding personnel performed the weld surfacing (buttering operation / build-up of weld metal) on the square edges of the rib and stem of the saddle (cast section) per the SMAW process using LB52A E7016 electrode. The QA Inspector observed that the machining operation was in process at the end of the QA Inspectors' shift.

Buttering Weld Operation of Saddle: West Deviation Saddle Segment W2-W1 (cast section)

The QA Inspector observed the weld surfacing (buttering operation / build-up of weld metal) on the inside of the

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trough on west deviation saddle segment W2-W1 (cast section). The buttering operation is being performed at specific locations where the temporary attachments (stay plates) will be located for dimensional and distortion control. 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. Sainokami (08-5141) were in compliance with WPS SJ-3012-1-2 per the SMAW process in the vertical position using (4) mm LB52A electrode. The QA Inspector observed that the buttering weld 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. On this date, the QA Inspector observed that no work was performed.

Grinding Operation on Saddle: East Saddle E2-E1

The QA Inspector observed that JSW personnel were performing 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 and subsequently the NDT operation. The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

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

The QA Inspector observed 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 ASTM A609M and to the acceptance quality levels in Table 2 of ASTM A609M. The ultrasonic testing quality level (1) is for within (30) mm of the exterior and interior surface for the full length of the trough as shown on the plans and ultrasonic testing quality level (3) for areas outside of (30) mm of the surface 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.

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 NIS QC NDT personnel performing the NDT (liquid penetrant test- for information only, magnetic particle test, and ultrasonic test) inspection. The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that the layout (placement of grid lines) on the saddle segment (cast section) for the NDT inspection would commence sometime during the week of April 27th 2009.

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

The QA Inspector observed that the rough machining operation on west jacking saddle (cast section) was completed. The next operation to be performed by JSW is the NDT inspection (liquid penetrant, magnetic particle, and ultrasonic) tests on the rough machined surfaces prior to the shaping operation.

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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.

Inspected By:	Peterson, Art	Quality Assurance Inspector
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Reviewed By:	Lanz, Joe	QA Reviewer
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