

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-005848**Date Inspected:** 01-Apr-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Japan Steel Works**Location:** Muroran, Japan

CWI Name:	Chung Fu Kuan		
Inspected CWI report:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A

CWI Present:	Yes	No	
Rod Oven in Use:	Yes	No	N/A
Weld Procedures Followed:	Yes	No	N/A
Verified Joint Fit-up:	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 Foundry at Japan Steel Works.

Fabrication Shop #4

Welding Operation of middle stiffener plates to (cast section) of Tower Saddle: Tower Saddle Segment T1-1

The QA Inspector observed that the partial-joint penetration (PJP) groove weld operation on middle stiffener plates (7ST-14, 7ST-15, 7ST-16, and 7ST-17) to the tower saddle and the ribs were completed on the 1st side of tower saddle segment T1-1. The tower saddle segment is now being re-positioned on this date so the 2nd side welding of the PJP groove weld operation can resume after the middle plate stiffeners reach the minimum preheat temperature of 110 degrees Celsius. The repositioning of tower saddle T1-1 was in process at the end of the QA Inspectors' shift.

Machining of completed segment: West Deviation Saddle Segment W2-E2

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

West Deviation Saddle Segment W2-E1 (After PWHT and Final Machining)

The QA Inspector observed that no work was performed on this date.

Grinding Operation on bevels of rib plates and stem plate (steel section): West Deviation Saddle Segment W2-E3

The QA Inspector observed JSW personnel performing the grinding operation on the rib plates and stem plate's prepared edges (face of bevels) of west deviation saddle W2-E3 (steel section). These areas that are being prepared

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

by grinding were difficult to be machined. The JSW personnel are grinding to the scribe lines (layout marks and punch marks of the final dimension of the groove area) prior to the fit-up operation of west deviation saddle W2-E3 (cast section). The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

Machining of (steel section): West Deviation Saddle Segment W2-W1 (After PWHT)

The QA Inspector observed that west deviation saddle segment W2-W1 is in Machine Shop #4 to have the root face dimension machined (partial-joint penetration groove welds) on the stem and ribs so the fit-up tolerances will meet the mill to bear surface requirements per the approved shop drawings and the contract specifications. The QA Inspector observed that no machining was performed on this date.

NDT of back-gouge of groove weld on rib (steel section) to rib (cast section): Tower Saddle Segment T1-2

The QA Inspector observed NIS Quality Control (QC) Inspector Mr. R. Kumagai perform the magnetic particle testing (MPT) inspection (dry method) of the prepared U-groove of the rib plate (cast section) to rib plate (steel section). The complete-joint penetration groove was ground after the back-gouge operation was completed by JSW personnel. The MPT inspection was on rib (steel section) to rib (cast section) weld 8Y5U-1, 8Y5U-2, and 8Y5U-3 of tower saddle segment T1-2. The QA Inspector observed that the MPT inspection was completed at the end of the QA Inspectors' shift.

Fit-up operation of (steel section): West Deviation Saddle Segment W2-W2

The QA Inspector observed that the fit-up and tack-weld operation on rib plates (5-5 and 5-6) to base plate (2G) horizontal position and to stem plate (3G) vertical position were completed on west deviation saddle (steel section) W2-W2. The QC Inspector Mr. Chung Fu Kuan informed the QA Inspector that rib plates (5-15 and 5-16) would be the next set of rib plates to be fit and tack-welded to the base plate and stem plate. The QA Inspector observed that the fit-up operation was in process at the end of the QA Inspectors' shift.

Buttering operation on (cast section): Tower Saddle Segment T1-3

The QA Inspector observed the buttering weld operation on the square edge of the ribs (cast section) on tower saddle segment T1-3. The QA Inspector observed QC Inspector Mr. Chung Fu Kuan verify prior to the start of the welding operation that the preheat temperature of 150 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. T. Kawagishi (08-5026) on rib (cast section) 9Y-5U-3, the welding parameters of JSW welding personnel Mr. H. Narita (08-5092) on rib (cast section) 9Y-12U-3, and the welding parameters of JSW welding personnel Mr. D. Hiragawa (08-3566) on rib (cast section) 9Y-9U were in compliance with WPS SJ-3012-1-1 per the SMAW process in the flat position. The QA Inspector observed that the buttering weld operation was in process at the end of the QA Inspectors' shift. The tower saddle (steel section) has been completed and is ready to be fit to the (cast section).

Foundry Shop:

NDT of (cast section): West Deviation Saddle Segment W2W2

The QA Inspector observed NIS NDT personnel preparing west deviation saddle segment W2W2 for NDT Inspection by placing grid lines on the interior and exterior of the cast sections of the tower saddle and stem for guidance in scanning and record purposes. The NIS NDT personnel will perform magnetic particle testing (MPT) by the wet method and ultrasonic testing. The QA Inspector observed that the preparation for NDT was in process at the end of the QA Inspectors' shift.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Shaping of (cast section): East Saddle E2-E1

The QA Inspector observed that JSW personnel were performing the shaping (scarfing) operation- (removal of cast material on the rough casting) on the outside of east saddle E2-E1 to profile to the proper dimension and radius. The QA Inspector observed the shaping operation was in process at the end of the QA Inspectors' shift.

Grinding operation of (cast section): East Saddle E2-W1

The QA Inspector observed that no work was performed on this date on the outside of the saddle section where the shaping operation was completed and JSW were in process on the grinding operation to profile the shaped areas to a smooth finish on east saddle E2-W1 (cast section).

Moving (cast section) to Machine shop #2: West Deviation Saddle Segment W2-W1

The QA Inspector observed that west deviation saddle W2-W1 (cast section) is in process of being moved to machine shop #4 to be machined prior to the fit-up operation to the west deviation saddle W2-W1 (steel section).

The QA Inspector observed that no machining was performed on this date.

Heat Treatment of weld repairs on (cast section): West Deviation Saddle Segment W2-W3

The QA Inspector was informed by JSW representative Mr. Hideaki Kon that the post weld heat treatment (stress relief) operation was being performed on west deviation saddle W2-W3 (cast section) on this date.

Other:

Ok to Cut on Material: East Saddles

The QA Inspector was escorted by JSW representative Mr. Hideaki Kon to fabrication shop #2 to perform an "OK to Cut" on (5) steel plates. The plates were identified as follows: Qty: (1) ASTM A709 Grade 345T2-ZT (40mm x 1850mm x 3200mm) Plate No. 100676-1; Qty: (2) ASTM A572M Grade 345-ZT- Modified (120mm x 2650mm x 5150mm) Plate No. 016778-1 and Plate No. 016780-1; Qty: (1) ASTM A572M Grade 345-ZT- Modified (125mm x 1850mm x 3000mm) Plate No. 016779-1; and Qty: (1) ASTM A709-06A Grade 345T2-ZT (75mm x 1850mm x 4800mm). The QA Inspector verified the plate numbers stenciled on the steel plate against the material test reports for accuracy and also verified that the mechanical properties and chemistry results were in compliance with the material specification and contract specifications. The QA Inspector assigned Caltrans Lot number B273-002-09 for JSW to proceed with the cutting operation.

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

Reviewed By: Lanz, Joe

QA Reviewer