DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 70.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006641
Date Inspected: 07-May-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: Makhmud Ashadi

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ 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 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 no machining was performed on the tower saddle segment.

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

The QA Inspector observed that tower saddle segment T1-2 is located in Machine Shop #4 to have the steel plate section of the ribs and stems on the prepared groove areas (root face) milled prior to the fit-up operation of the base plate. On this date, the QA Inspector observed JSW personnel were taking dimensions from the assembly control lines prior to the start of the machining / milling operation on the prepared groove areas of tower saddle segment T1-2.

Fabrication Shop #4:

Welding Operation of Saddle: Tower Saddle Segment T1-3 (cast 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 rib plate (cast section) of tower saddle segment T1-3. The QA Inspector observed Quality Control (QC)

Inspector Mr. Makhmud Ashadi verify prior to and during the welding operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. T. Ohkawa (03-3091) on weld joint no. 9Y-8U (root and fill passes) and Mr. K. Sadakawa (06-2929) on weld joint no. 9Y-7U were in compliance with WPS SJ-3012-4 per the SMAW process using (5.0) mm diameter LB52A 7016 electrode in the (2G) horizontal position. The QA Inspector observed that the partial-joint penetration groove fill pass weld operation was in process at the QA Inspectors' shift.

NDT 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 Fabrication Shop #4. On this date, the QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) Non-Destructive Testing (NDT) personnel Mr. R. Kumagai (#132) performing magnetic particle test (MPT) inspection (dry method) on the edge of the rib plate (cast section) to the edge of the rib plate (steel section) where the exposed- (visible) root face dimensions of the partial-joint penetration groove welds are located. The purpose of the MPT inspection is to gather all of the indications observed from the exposed root face dimension to put into a report form for evaluation by JSW personnel. The QA Inspector observed that Mr. Kumagai was performing MPT inspection at the end of the QA Inspectors' shift on west deviation saddle segment W2-E1.

Machine Shop #2:
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 no machining being performed.

Fabrication Shop #4:
Welding Operation of Saddle: West Deviation Saddle Segment W2-E3 (cast section being welded to steel section)
The QA Inspector observed that the JSW personnel were still in process on re-positioning- (turning over) west deviation saddle segment W2-E3 in preparation to resume the welding on the 2nd side of the partial-joint penetration groove welds on the rib plate (steel section) to rib plate (cast section). The QA Inspector observed that the re-positioning of west deviation saddle segment W2-E3 was in process at the end of the QA Inspectors' shift.

Fit-up Operation of Saddle: West Deviation Saddle Segment W2-W1 (cast section being fit to steel section)
The QA Inspector observed JSW personnel completed the fit-up operation of west deviation saddle segment W2-W1 (cast section) to west deviation saddle segment W2-W1 (steel section). On this date, the QA Inspector observed that JSW welding personnel Mr. D. Kito (08-5175) was welding a lifting lug onto the end rib (cast section) per the SMAW process in the (3G) vertical position. The location of the lifting lug was on an area that had built-up weld surfacing layers- (buttering weld operation) deposited on the cast section. The Quality Control Inspector Mr. Makhmud Ashadi informed the QA Inspector that JSW uses their in-house weld procedure specifications to perform the weld operation of the lifting lug on the end rib cast section of the west deviation saddle segment. The QA Inspector observed that the weld operation was in process at the end of the QA Inspectors' shift.
Welding Operation on Saddle: West Deviation Saddle Segment W2-W2 (steel section being welded to base plate)
The QA Inspector observed the partial-joint penetration groove fill pass weld operation on the rib plate (steel section) to base plate (steel section) and rib plate (steel section) to stem plate (cast section) on west deviation saddle segment W2-W2. The QA Inspector observed Quality Control (QC) Inspector Mr. Makhmud Ashadi 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. T. Watanabe (08-5153) on weld joint no. W2Y-10V and Mr. M. Kashiwada (08-2008) on weld joint no. W2Y-7L were in compliance with WPS SJ-3011-3 and WPS SJ-3011-2, respectively per the FCAW process in the (1G) flat position using (1.6) mm diameter TM95 electrode. The QA Inspector observed that the partial-joint penetration groove fill pass weld operation was in process at the QA Inspectors' shift.

Fit-up Operation of Built-up section of Saddle: West Deviation Saddle Segment W2-W3 (steel section)
The QA Inspector observed the fit-up and tack-weld operation of rib plate (6-8) to base plate and to stem plate on west deviation saddle segment W2-W3. The QA Inspector observed QC Inspector Mr. Makhmud Ashadi verify prior to the start of and during the tack-welding operation that the preheat temperature of 160 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. T. Ohta (08-2017) were in compliance with WPS SJ-3011-11 per the SMAW process using E9018M (4.0) mm diameter electrode in the (2G) horizontal position. The QA Inspector observed that the tack-welding 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.

NDT Operation on Saddle: West Deviation Saddle Segment W2-W3 (cast section)
The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) Non-Destructive Testing (NDT) personnel Mr. A. Seino (#82) performing the ultrasonic test (UT) inspection on west deviation saddle W2-W3 (cast section). The UT inspection was performed on both major and minor defect repairs that were located on the outside of the trough along the full length and on the rib sections. The UT inspection was in accordance with ASTM A609M and to acceptance quality level (1) within 30 mm of the final surface and acceptance quality level (3) outside of 30 mm of the final surface. The QA Inspector observed that the UT inspection performed by Mr. A. Seino was in process at the end of the QA Inspectors' shift.

Grinding Operation on Saddle: East Saddle E2-E1 (cast saddle)
The QA Inspector observed that JSW personnel were performing the grinding operation on the shaped areas on the outside of the trough section and on the rib sections where previously 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 for subsequently the NDT operation.
The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors shift.

Repair Operation pending on Saddle: East Saddle E2-W1 (cast saddle)
The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that JSW personnel will perform the gouging operation (air-carbon arc method) of discontinuities 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 on the outside of the trough section and rib sections of east saddle E2-W1 (cast section). The QA Inspector observed that no work was performed on this date.

Machine Shop #2:
Machining Operation of Saddle: West Jacking Saddle (cast saddle)
The QA Inspector observed that the west jacking saddle is located in Machine Shop #2. On this date, the QA Inspector observed that no machining was performed on the west jacking saddle.

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