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-006689
Date Inspected: 08-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 the inside of the north cable trough is being milled to final dimensions 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 of the ribs and stems 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 fit-up and tack-weld operation of (2) lifting lugs that are being positioned and welded on the rib (cast section) on Tower Saddle Segment T1-3. The QA Inspector observed JSW welding

personnel Mr. T. Ohta (08-2017) performing the tack-weld operation of the lifting lugs onto the end rib (cast section) per the SMAW process in the (3F) vertical position. The location of the lifting lugs are on an area- (weld pad) that had previous deposited weld surfacing layers- (built up area) onto 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 welding of the lifting lugs onto the built-up area on the end rib (cast section) of the tower saddle segment. The QA Inspector observed that the fit-up and tack-weld operation 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 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 on west deviation saddle segment W2-E2.

Fabrication Shop #4:
Welding Operation of Saddle: West Deviation Saddle Segment W2-E3 (cast section being welded to steel section)
The QA Inspector observed the partial-joint penetration groove (fill pass) weld operation on the stem (cast section) to stem (steel section) of west deviation saddle segment W2-E3. The QA Inspector observed Quality Control (QC) Inspector Mr. Makhmud Ashadi 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. Y. Maeyama (94-5234) and Mr. T. Kawakami (08-5079) on weld joint no. E3S2U were in compliance with WPS SJ-3011-5 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.

Weld Operation of Saddle: West Deviation Saddle Segment W2-W1 (cast section being fit to steel section)
The QA Inspector observed the partial-joint penetration groove (root pass) weld operation on the stem (cast section) to stem (steel section) of west deviation saddle segment W2-W1 stem (cast section). The QA Inspector observed Quality Control (QC) Inspector Mr. Makhmud Ashadi 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. K. Sadakawa (06-2929) on weld joint no. W1S2U were in compliance with WPS SJ-3011-5 per the SMAW process in the (2G) horizontal 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 QA Inspectors' shift.

The QA Inspector also observed that JSW welding personnel Mr. D. Kito (08-5175) was welding a lifting lug onto the end rib (cast section) per the FCAW process in the (3G) vertical position. The location of the lifting lug was on an area- (weld pad) that had previous deposited weld surfacing layers- (built up area) onto 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) of west deviation saddle segment W2-W2. The QA Inspector observed Quality Control (QC) Inspector Mr. Makhmud Ashadi 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 (08-5153) on weld joint no. W2Y-6L and Mr. M. Kashiwada (08-2008) on weld joint no. W2Y-13L were in compliance with WPS SJ-3011-2 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's (6-8, 6-10, and 6-12) were completed on one side of the stem plate and base plate of west deviation saddle segment W2-W3 and of rib plate's (6-7, 6-9, and 6-11) were completed on the other side of the stem plate and base plate on west deviation saddle segment W2-W3. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-W3.

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 on west deviation saddle segment W2W2 (cast section).

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 previously performed and located on the outside of the trough at various locations along its the full length and also at various locations 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 JSW personnel removed the excess cast material by the scarfing operation- (air-carbon-arc method) on the rough casting of east saddle E2-E1 (cast saddle). The purpose of the grinding operation is to profile the areas to a smooth finish and subsequently for the NDT operation. The QA Inspector observed that the grinding operation was in process on east saddle E2-E1 (cast saddle) at the end of the QA Inspectors shift.

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

The QA Inspector observed JSW personnel were removing defects from the outside of the trough section at various depths and locations along its length by the gouging operation (air-carbon arc method) on east saddle E2-W1 (cast saddle). The defects 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 outside of the trough section and rib sections of east saddle E2-W1 (cast saddle). The QA Inspector observed that the gouging operation was in process at the end of the QA Inspectors' shift.

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