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-007636
Date Inspected: 03-Jul-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

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 at Japan Steel Works.

Machine Shop #4:

Final Machining Operation in process on Saddle: Tower Saddle Segment T1-1

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 the JSW personnel were in process on the milling operation in between the trough sections of where the faying surfaces of the bolted connections of the tie rods are located on the top of the trough on tower saddle segment T1-1.

Fabrication Shop #4:

Weld Operation in process on Saddle: Tower Saddle Segment T1-2

The QA Inspector observed the partial-joint penetration (PJP) weld operation on the upper stiffener plates welded to the rib plate (cast section) and trough (cast section) of tower saddle T1-2. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the PJP weld operation that the minimum preheat temperature of 150 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. T. Watanabe (08-5169) on plate no. 8ST-14, Mr. M. Inoue (92-5683) on plate no. 8ST-13, Mr. K. Kobayashi (08-5023) on plate no. 8ST-17, and Mr. Y. Watanabe (73-3873) on plate no. 8ST-18 were in compliance with WPS SJ-3012-8-2 per the FCAW-G process in the (1G) flat position using (1.6) mm diameter TM55 electrode. The QA Inspector observed that the PJP weld operation was in process at the end of the QA Inspectors' shift.

Fit-up Operation of Base Plate in process on Saddle: Tower Saddle Segment T1-3

The QA Inspector observed JSW welding personnel Mr. Y. Ohta (08-2017) welding temporary attachments per the SMAW process in the (3F) vertical position to the edge of the base plate and to the edge of the rib plate of tower saddle segment T1-3. The purpose of welding the temporary attachments to the edge of the base plate and to the edge of the rib plate is to hold the base plate into position when JSW welding personnel start the weld operation on the rib plate and stem plate tee and corner joint welds to the base plate. The Quality Control Inspector Mr. Chung Fu Kuan informed the QA Inspector that JSW uses their in-house weld procedure specifications to perform the welding of the temporary attachments at specific locations to the edge of the base plate and rib plate. These specific locations have excess base metal material which will subsequently be machined off. The QA Inspector observed that the welding of the temporary attachments to the base plate and rib plate of tower saddle segment T1-3 was in process at the end of the QA Inspectors' shift.

Storage of Saddle: West Deviation Saddle Segment W2-E1

The QA Inspector observed that west deviation saddle segment W2-E1 is located in Fabrication Shop #4. The QA Inspector observed that no other work was performed on west deviation saddle segment W2-E1 on this date.

Final Dimensional Inspection in process on Saddle: West Deviation Saddle Segment W2-E2

The QA Inspector observed that JSW has started the dimensional inspection on west deviation saddle segment W2-E2 of the machined base plate, machined surfaces inside of the trough, the tie rod and anchor bolt holes, the connection bolt holes on the end rib plates, and the machined surfaces that mate to west deviation saddle segments W2-E1 and W2-E3. The dimensional inspection is being performed by an independent third party hired by JSW. The equipment being used is a 3D Laser tracking device manufactured by Leica. The QA Inspector was informed by JSW Representative Mr. Hideaki Kon that the dimensional inspection will be completed in approximately 2 days. The QA Inspector observed that the dimensional inspection was in process at the end of the QA Inspectors' shift.

Machine Shop #2

Final Machining Operation in process on Saddle: West Deviation Saddle Segment W2-E3

The QA Inspector observed that west deviation saddle segment W2-W3 is located in Machine Shop #2 to have the final machining performed. On this date, the QA Inspector observed JSW personnel performing the milling operation on the end rib plate to final thickness dimensions on west deviation saddle segment W2-E3.

Fabrication Shop #4

Cleaning Operation completed on Saddle: West Deviation Saddle Segment W2-W1

The QA Inspector observed that the blast cleaning operation was completed on west deviation saddle W2-W1 on the weldments and surrounding base metal. The next operation on the west deviation saddle segment will be the NDT- magnetic particle test inspection (dry method) operation.

Weld Operation in process on Saddle: West Deviation Saddle Segment W2-W2

The QA Inspector observed the partial-joint penetration (PJP) groove (fill pass) weld operation on the rib plate (steel section) to rib (cast section) of west deviation saddle segment W2-W2. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the PJP groove weld operation that the minimum preheat temperature of 160 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. J. Yaegashi (07-2941) on weld joint no. W2Y-17U (plate 5-16) side and Mr. M. Kato (08-5018) on

weld joint no. W2Y-16U (plate 5-14) side were in compliance with WPS SJ-3011-7 per the FCAW-G process in the (1G) flat position using (1.6) mm diameter TM95 electrode. The QA Inspector observed that the PJP groove (fill pass) weld operation was in process at the end of the QA Inspectors' shift.

NDT Operation in process on Saddle: West Deviation Saddle Segment W2-W3
The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) performing the magnetic particle test (MPT) inspection (dry method) of the partial-joint penetration (PJP) groove welds after the intermediate post weld heat treatment (PWHT) stress relief operation on the rib plate to stem plate; stem plate to base plate; and the rib plate to base plate of west deviation saddle segment W2-W3. The QA Inspector observed that the MPT inspection was in process at the end of the QA Inspectors' shift.

Buttering Operation on Saddle: West Deviation Saddle Segment W2-W3
The QA Inspector observed the weld surfacing (buttering operation / build-up of weld metal) on the exterior of the end rib on west deviation saddle segment W2-W3 (cast section). The buttering operation is being performed at specific locations where the temporary attachments will be located for dimensional and distortion control during the weld operation. 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 150 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. D. Kito (08-5175) were in compliance with WPS SJ-3012-1-2 per the SMAW process in the horizontal and vertical positions using (4) mm diameter LB52A electrode. The QA Inspector observed that the buttering weld operation on the interior of the trough was in process at the end of the QA Inspectors' shift.

Layout Operation on "Hold" of Rocker Bearing Plate Assembly: East Saddle E2-W1
The QA Inspector observed that rocker bearing plate assembly for E2-W1 is located in Machine Shop #2. The JSW personnel were in preparation to perform the layout operation of the rocker bearing dowel locations against the approved dimensional drawings and assembly control lines but the operation has been put on "hold". The JSW Representative Mr. Hideaki Kon informed the QA Inspector that the reason why the layout operation was put on "hold" was that JSW is waiting the response back from prime contractor American Bridge Fluor / JV regarding the confirmation of the location of the anchor bolt holes on east saddle rocker bearing plate E2-W1.

NDT Operation in process / pending completion on End Splay Cover Plate Assembly: East Saddle E2-E1
The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) has not completed the magnetic particle test (MPT) inspection (dry method) of the complete-joint penetration (CJP) groove welds and fillet welds on the cover plate stiffeners and diaphragm plates in between the cover plate stiffeners on end splay cover plate assembly for E2-E1 on this date. The QA Inspector observed that no other work was performed on the end splay cover plate assembly for east saddle E2-E1.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with the applicable contract specifications.

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:	Guest,Kittric	QA Reviewer