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

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-005246
Date Inspected: 19-Jan-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Japan Steel Works

OSM Arrival Time: 830
OSM Departure Time: 1900
Location: Muroran, Japan

CWI Name: Chung 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:

Steel Structure Welding Shop:

T1-1 Tower Saddle Casting and Steel Structure Joint Section: Caltrans Quality Assurance Inspector (QAI) representative observed Japan Steel Works (JSW) welders perform Flux Cored Arc Welding (FCAW) process on rib plate welds 7S-2U-1 and 7S-3U-1. These two welds are connecting to casing and steel structure. The filler metal used for FCAW is Hoballoy wire TM-55, 1.6 diameter made by Hobart Brothers, USA. The parameters used for FCAW welding of assemblies were conducted in accordance with Caltrans approved WPS #SJ-3011-6. The FCAW welding process and parameters have been monitored and recorded by CWI inspector Mr. Chung Kuan. Based on Caltrans QA observation, the FCAW welding operation appeared to be in general compliance with requirements of AWS D1.5 2002 and Caltrans contract documents.

W2W1 West Deviation Saddle Steel Structure: Caltrans QAI representative observed JSW welders in process fit up and Shielded Metal Arc Welding (SMAW) temporary tack welds on the W2W1 west deviation saddle steel structure portion. Total two rib plates numbered 4-9 and 4-11 have been fit up and tack weld attached to stem plate numbered 4-2. The proper filler metal used for SMAW is Hoballoy 9018-M with 4.2mm diameter electrode made by Hobart Brothers, USA. The tack weld areas have been preheated to 110C prior welding. The fit up and tack welding process and parameters have been monitored and recorded by CWI inspector Mr. Chung Kuan. Based on Caltrans observations, no discrepancies were noted.

W2E3 West Deviation Saddle Steel Structure: Caltrans QAI representative observed a JSW welder in process of grinding to remove the cracks from vertical position tack welds and the saddle has been rotated 180 degree for crack repair purpose. Total of nine cracks were located on rib 3-9 and 3-10 with vertical position has been

removed. The crack remove surfaces have MT test prior SMAW root pass welding. The proper filler metal used for SMAW is Hoballoy 9018-M with 4.2mm diameter electrode made by Hobart Brothers, USA. The entire steel structure remains preheat temperature 110C degree during the crack removal and root pass welding. The root pass welding process and parameters have been monitored and recorded by CWI inspector Mr. Chung Kuan. Based on Caltrans observations, no discrepancies were noted.

T1-2 Tower Saddle Casting: Caltrans QAI representative observed four welders perform buttering build up welding on two stem plates numbered 8S-2U and 8S-3U of T1-2 tower saddle casting portion. This buttering welding is approved by Caltrans RFI# ABF-RFI-001453. The buttering layer in order to decrease the pre-heat temperature to 110C degree minimum for casting and steel portion during joint welding. The buttering buildup metal welding utilizing the SMAW process was conducted by welders in the flat position. A 10mm hiegth weld metal has been welded the entire surface of two stem plate. The proper filler metal used for SMAW is LB52A (E7016) with 5mm diameter electrode made by Kobe, Japan. The SMAW welding process and parameters have been Caltrans approved WPS SJ-3012-1-2, also monitored and recorded by CWI inspector Mr. Chung Kuan. Based on Caltrans QA observations, the buildup SMAW welding operation appeared to be in general compliance with requirements of AWS D1.5 2002 and Caltrans approved RFI documents.

Casting Shop:
West Deviation Saddle casting W2W2 and W2W1: Caltrans QAI observed NIS NDT level II technicians perform straight beam UT test on rib side of W2W2 and W2W3 West Deviation Saddles. The thickness of saddle casting from 150mm to 500mm and both saddle test surface have been Magnetic Particle Test (MT) prior UT test. The straight beam tests have been not completed today and continue to tomorrow. Based on Caltrans observations, no discrepancies were noted.

Summary of Conversations:
CWI Mr. kuan informed Caltrans QAI that he had asked company for one more inspector to cover the welding. However, the company response will looking for inspector and let him know in week.

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:	Pau,Wai	Quality Assurance Inspector
Reviewed By:	Lanz,Joe	QA Reviewer