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-005102
Date Inspected: 26-Dec-2008

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

OSM Arrival Time: 830
OSM Departure Time: 1830
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:

T1-3 Tower Saddle Steel Structure: Caltrans Quality Assurance Inspector (QAI) observed JSW workers rotating the T1-3 Tower Saddle Steel Structure 180 degree for Flux Cored Arc Welding (FCAW) welding. Approximately three completed the structure rotation. Two welders performed FCAW processes on a rib plate weld # 9Y-5V (3-3) and # 9Y-12V (3-3) of T1-3 tower saddle steel structure after structure rotation. The filler metal and shield gas used for FCAW welding is Hoballoy wire TM-95K2, 1.6 diameter made by Hobart Brothers, USA with 100% C02. The parameters used for FCAW welding of assemblies were conducted in accordance with Caltrans approved WPS #SJ-3012-3. 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.

W2E3 West Deviation Saddle Steel Structure: The W2E3 west deviation saddle in process fit up and SMAW temporary tack welding. During inspection the CWI inspector and Caltrans QA inspector located some cracks along the one side of temporary tack weld edge thru the weld length of 120mm. Total of 8 temporary tack welds have been found to be cracked during the fit up process. All the cracks are from rib plates to stem plate in the vertical position. The flat position tack welds aren't showing any relevant cracks. The crack was found on temporary tack welding has prior history on other tower saddle and deviation saddle fit up process. According to JSW welding Engineer Mr. Nagaya and CWI Mr. Kuan the cracks will be 100% removed from the tack weld locations after fit up process complete. The Magnetic Particle Test will be performed to evaluate the crack areas and ensure locations are free of defects prior to welding the permanent root pass.

WELDING INSPECTION REPORT

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Casting Shop:

W2W3 West Deviation Saddle Casting: Caltrans QAI observed one welder perform air carbon arc gouging process on exterior rough surface of rib sides U-1 and U-2 for west deviation saddle W2W3 after rough machining. The gouging areas are not uniform surface and not able to use machining. The gouging purpose is to remove all of excess metal from the rib areas. The gouging process will continue to December 28, 2008. Based on Caltrans observations, no discrepancies were noted.

T1-2 Tower Saddle Casing: - The QAI observed Nikko Inspection Service (NIS) NDT technicians perform dry MT testing on all the metal surfaces of T1-2 tower saddle casting after blast cleaning. The dry MT was performed and evaluated in accordance with ASTM standard E709 and Caltrans Special Provisions, using the yoke method. The yoke utilized appeared to be model UM 3BF, serial numbers 93-05. The yoke light output was verified with a Hioki model 3408 light meter. The magnetic field was verified with a field indicating gauge (pie gauge). Visible dry red magnetic particles were utilized and made by Magnotron, Japan. During MT testing no relevant indications on the surface were discovered. The MT test will continue to December 28, 2008. Based on Caltrans QA observation, the MT test operation appeared to be in general compliance with requirements of AWS D1.5 2002 and Caltrans contract documents.

Summary of Conversations:

As noted within the report.

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