

**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 #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-005233**Date Inspected:** 14-Jan-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** Chung Kuan**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** 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:

Witnessing AWS D1.5 standard SMAW and FCAW welder qualification welding test: Caltrans QAI representative witnessed two welders performed welder qualification test. The qualification welding tests utilizing the Shielded Metal Arc Welding (SMAW) and Flux Cored Arc Welding (FCAW) process were conducted by welders performed in the SMAW vertical position (3G) and FCAW flat position (1G). The welder Mr. Hidetoshi Mizuhara (91-2417) performed FCAW welding test and welder Mr. Ryuichi Iwasaki (68-1911) performed SMAW and FCAW welding test. The material used for the both welder qualification test specimens was reported by JSW Welding Engineer Mr. Takaaki Maruya as ASTM A 709M-HPS-485WT plate having a thickness measurement of 25mm. The weld joint design used butt joint, single-V-groove weld with 25mm wide backing bar. The proper filler metal used in the test for SMAW is Hoballoy 9018-M with 5mm diameter electrode made by Hobart Brothers, USA. The filler metal and shield gas used in the test for FCAW is Hoballoy wire TM-95K2, 1.6 diameter with 100% CO<sub>2</sub> made by Hobart Brothers, USA. The SMAW and FCAW welding process and parameters have been monitored and recorded by CWI inspector Mr. Chung Kuan. Based on Caltrans QA observation, the welder qualification tests appeared to be in general compliance with requirements of AWS D1.5 2002 Section 5 and Caltrans contract documents.

T1-1 Tower Saddle Casting and Steel Structure joint section: Caltrans Quality Assurance Inspector (QAI) representative observed three Japan Steel Works (JSW) welders perform Flux Cored Arc Welding (FCAW) process on rib plate welds #7Y-5U-1, 7Y-5U-2 and 7Y-5U-3 of T1-1 tower. These three 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

---

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 2 )

---

---

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.

W2E2 West Deviation Saddle Casting and Steel Structure joint section: Caltrans QA Inspector representative observed a JSW welder performed SMAW process two of temporary U-shape steel supports. The supports are secure the casing and steel portion of saddle. The proper filler metal used in the test for SMAW is Hoballoy 9018-M with 5mm diameter electrode made by Hobart Brothers, USA. Based on Caltrans observation, no discrepancies were noted.

Casting Shop:

W2E3 West Deviation Saddle casting: Caltrans QAI observed one JSW worker performed grinding process on exterior rough surface of rib sides for W2E3 west deviation saddle after arc-gouging. Grinding process is to remove all the exceed metal, oxide film and slag caused by gouging. Based on Caltrans observation, no discrepancies were noted.

### **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.

---

<b>Inspected By:</b>	Pau,Wai	Quality Assurance Inspector
<b>Reviewed By:</b>	Lanz,Joe	QA Reviewer

---