

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-004521**Date Inspected:** 29-Oct-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1800**Contractor:** Japan Steel Works**Location:** Muroran, Japan

CWI Name:	Chung Fu-Kuan		
Inspected CWI report:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A

CWI Present:	Yes	No	
Rod Oven in Use:	Yes	No	N/A
Weld Procedures Followed:	Yes	No	N/A
Verified Joint Fit-up:	Yes	No	N/A
Approved WPS:	Yes	No	N/A
Delayed / Cancelled:	Yes	No	N/A
Component:	Tower, Deviation and Jacking Saddles		

Bridge No: 34-0006**Summary of Items Observed:**

On this date OSM Quality Assurance (QA) Representative Daniel L. Reyes was present during the welding of the structural steel components regarding the West Deviation and the Tower Saddles relative to this project. The following was observed:

Fabrication Shop # 4

At the start of the shift, the QA inspector observed the scheduled Partial Joint Penetration (PJP) groove welding of the structural steel grillage to the casting, QC inspection and the verification of the Alternating Current (AC) welding parameters during the welding on the West Deviation Saddle identified as W2E1. The welding was performed on the rib to rib connections identified as E1Y-4U-2 and E1Y-5U.

The welding of E1Y-4U-2 was performed by Japan Steel Works, Ltd. (JSW) welding personnel Watanabe Sotaru ID 08-5159 and the welding of E1Y-5U was performed by JSW welding personnel Yamashita Masao ID 73-4195 utilizing the Shielded Metal Arc Welding (SMAW) process. The welding of the PJP connections was performed utilizing the Welding Procedure Specification (WPS) SJ-3011-6, which was also used as a reference by Intertek Testing Services (ITS) Quality Control (QC) Inspector Chung Fu-Kuan during QC verification of the welding parameters.

The QA inspector also observed the welding was performed utilizing the Distortion Control Plan, identified as Document Number SJ-3109 Revision 4. It was also noted the welding was performed in the horizontal (2G) position with the work in the vertical plane and the axis of the weld horizontal.

The consumable utilized by the welding personnel appeared to be a Hobart Brothers Product and the trade name

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was identified as Hoballoy 9018-M which appeared to comply with the AWS Specification A5.5 and the AWS Electrode Classification E9018-M-H4R. The diameter of the electrodes utilized was 4.8 in diameter.

Later in the shift the QA inspector observed the weld build-up of the casting stem on the Tower Saddle identified as T1-1. The welding was performed on the casting stems which were identified as 7S-2U and 7S-3U utilizing the Welding Procedure Specification (WPS) SJ-3012-1-1. The WPS was also used by the QC inspector as a reference during QC verification of the Alternating Current (AC) welding parameters. The SMAW process was performed by JSW welding personnel Ryota Kato ID 07-4510, Daisuke Hirakawa ID 08-3566 and Naoki Murai ID 97-2118. The welding was performed in the flat position with the work in the horizontal plane and the weld metal deposited from above.

The 5.0 diameter consumable utilized by the JSW welding personnel appeared to be a Hobart Brothers Product and the trade name was identified as LB52-A which appeared to comply with the AWS Specification A5.1 and the AWS Electrode Classification E7016.

The QA inspector also observed the welder performance test and the QC inspection during the testing by JSW personnel Tohru Sudo ID 03-3082 and Junki Yaegashi ID 07-2941. The test were performed in the vertical (3G) and horizontal (2G) positions utilizing the WPS SJ-2983 and WP-1 SJ-2983 WP-5, which were also used by the QC inspector as a reference during the monitoring of the welding and verification of the AC and DC welding parameters. The testing was conducted by JSW Welding Engineer, Takaaki Maruya.

The QA inspector performed a preliminary Magnetic Particle Testing (MPT) of the Partial Joint Penetration (PJP) groove welds on the Tower Saddle identified as T1-1. The performance of the testing was conducted at the conclusion of the initial Post Weld Heat Treatment (PWHT) of the tower saddle grillage. The testing was performed utilizing the dry visible continuous method of inspection and the Parker AC Contour Probe, Model DA-400S. A Magnetic Particle Test Report, TL-6028 was generated on this date.

Later in the shift this QA inspector observed, at random intervals the QC inspector's performing QC verification of the welding parameters, the minimum preheat and maximum interpass temperatures.

The QA inspector's observations were performed at random intervals during the shift. The QA inspector noted that it appeared the approved and latest revised WPS's were posted at the welding station and that each approved welder was entered in the latest revised Welding Personnel Log issued by Japan Steel Works, Ltd. The welding parameters, preheat and interpass temperatures were verified by the QA inspector utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempilstik temperature indicators were utilized during the verification of the heat control. The filler metal utilized by the JSW welding personnel was also verified. The QC inspector ITS personnel, Chung Fu-Kuan appeared to perform the visual weld examinations, monitoring of the welding and the verification of the welding parameters in accordance with the contract documents.

Foundry Shop

The QA inspector observed the Nikko Inspection Services (NIS) QC/NDT technicians Makoto Wada and Harumi Kohama perform straight beam ultrasonic testing of Tower Saddle casting identified as T1-2. The longitudinal ultrasonic examination was performed on the exterior surface of the ribs, stem and the main body of the casting utilizing a Krautkramer Branson USM-3S and a 2 MHz 24mm round transducer. The testing was performed in accordance with the JSW procedure specification number SJ-2878 revision 2. The testing was not completed on

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this date and the work appears to meet the minimum requirements of the contract specifications.

See Weld Joints in Progress Inspected, below, in regards to QA observation of the welding parameters recorded during this shift on this date.

The following digital photographs illustrate the observations of the activities performed on this date.



Item	Weld Identification	Applicable WPS	CWI Name	Amperage	Voltage	TravelSpeed	Preheat Temp	Remarks
1	E1Y-4U-2	SJ-3011-6	C. Fu-Kuan	260 AC	24.5 AC	164mm/m	200 Degrees C.	Satoru
2	E1Y-5U	SJ-3011-6	C. Fu-Kuan	257 AC	24 AC	155mm/m	195 Degrees C.	Masao
3	7S-2U	SJ-3012-1-1	C. Fu-Kuan	255 AC	24 AC	170mm/m	205 Degrees C.	Hirakawa

Summary of Conversations:

There were no pertinent conversations relative to the project on this date.

Comments

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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 Venkatesh Iyer, (858) 967-6363, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Lanz,Joe	QA Reviewer
