

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002357**Date Inspected:** 01-May-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Japan Steel Works, Ltd.**Location:** Muroran, Japan

<b>CWI Name:</b>	Chung Kuan and Makhmud Ashadi			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	Tower, Jacking and Deviation Saddles		

**Summary of Items Observed:**

On this date OSM Quality Assurance Representative Daniel L. Reyes observed the Welder Performance Qualification Tests (WPQT) and the inspections relative to this project. The following was observed:

**Testing Shop**

At the start of the shift this QA inspector observed the Welders Qualification Record Tests (WQRT) and the inspection performed by third party inspection agency Intertek Testing Services (ITS). The Japan Steel Works, Ltd. (JSW) welding personnel Hidetaka-Nishikawa ID 08-5162, Takatoshi-Inoue ID 08-5163 and Yuji-Sugawara ID 08-5160 performed the testing utilizing the Shielded Metal Arc Welding (SMAW) process. The tests were performed with the plate placed in the vertical plane with the axis of the weld vertical (3G position-up). The Welding Specification (WPS) utilized by the welders was identified as SJ-2983-WP-1 which was also used by the Quality Control (QC) inspectors Makhmud Ashadi and Chung Kuan as a reference.

Later in the shift this QA inspector observed JSW welding personnel Hidetaka-Nishikawa ID 08-5162, Takatoshi-Inoue ID 08-5163 perform a WPQT utilizing the gas-shielded Flux Cored Arc Welding (FCAW-G). The tests were performed with plate placed in the horizontal plane with the weld metal deposited from above (1G position). The Welding Specification (WPS) utilized by the welders was identified as SJ-2983-WP-2 which was also used by the Quality Control (QC) inspectors Makhmud Ashadi and Chung Kuan as a reference.

The material utilized for the welder performance qualification test specimens was reported by JSW Welding Engineer Mr. Takaaki Maruya as ASTM A709M-Gr.345T (plate to plate) having a material thickness measured at 25 mm. The weld joint design utilized appeared to be in compliance with the AWS D1.5-2002 Chapter 5 paragraph 5.23.1.2 and Figure 5.17 with a 10mm x 25mm backing bar. The filler metal and the shield gas utilized for FCAW process appeared to be TM-95K2 with an electrode size of 1.6 mm and the gas shielding utilized was

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100% CO2 medium and the filler metal utilized for the SMAW process appeared to be Hoballoy E9018-M with an electrode size of 4.0 mm and appeared to comply with the contract documents. The welding and welding parameters were monitored and recorded by the CWI inspectors Chung Kuan and Makhmud Ashadi and were also observed by this QA inspector. At the conclusion of the tests the QC inspectors performed the required visual inspections and at the conclusion of the inspection there no discrepancies were noted . The above QC activities were based on a random QA observation and the WQRT appeared to be in general compliance with the requirements of AWS D1.5 2002.

In regards to welding personnel Yuji-Sugawara ID 08-5160 who had failed the SMAW process Welder Performance Qualification Test (WPQT) on Tuesday, April 29, 2008 the QC inspector, Chung Kuan informed this QA inspector that on Wednesday, April 30, 2008 the welder Yuji-Sugawara had performed further training under the guidance and supervision of the JSW welding instructor, Hideo Watanabe. The QC inspector provided to this QA inspector the documentation regarding the number of additional hours of training performed by the welder, Yuji-Sugawara. This information appeared to comply with the requirements of AWS D1.5-2002 as stated below;

“5.28.1.2 Retest After Further Training or Practice. A retest may be made provided there is evidence that the welder or welding operator has had further training or practice. A complete retest of the types and positions failed shall be made.”

Also during the WPQT, this QA inspector observed the training of four (4) welders. The welders were performing the training under the guidance and supervision of the JSW welding instructor, Hideo Watanabe.

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



## Summary of Conversations:

There were general conversations with Japan Steel Works, Ltd. (JSW) Bridge Group Steel Products Department personnel Kunio Nagaya regarding the locations of inspection personnel.

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

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