

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-002649**Date Inspected:** 23-May-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** Tomio Imai**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 Saddle**Summary of Items Observed:**

The following report is based on METS observations at Japan Steel Works (JSW) in Muroran Japan.

The QA inspector was escorted to the Mechanical Test Lab by JSW personnel Mr. Kunio Nagaya to witness mechanical tests in accordance with the contract documents. The testing was supervised by JSW QC personnel, Mr. Hideo Domon.

The QA inspector observed two Reduced Section Tensile tests for test plate SW7-1 in accordance with AWS D1.5-2002 Section 5.18.1 and one all weld metal tensile test in accordance with AWS D1.5-2002 Section 5.18.4. The test machine Shimadzu 1000kn model, serial number I22104400055 calibration was verified to be due 05-15-2009. JSW QC personnel Mr. Naoya Takahashi verified the specimen dimensions and testing was performed and results recorded as follows.

Test Plate SW7-1, sample B1-1, 558MPa tensile, failure was in the base metal, sample B1-2, 548MPa tensile, failure was in the base metal and sample B2-1 (all weld metal), 566MPa tensile.

The samples were found acceptable in accordance with paragraph 5.19.1.

Caltrans witness lot number B88-121-08 was assigned to test plate SW7-1 for tracking purposes.

The QA inspector observed four each Side Bend tests for test plate SW7-1 in accordance with AWS D1.5-2002 paragraph 5.18.3. JSW QC personnel Mr. Naoya Takahashi performed tests and recorded results as acceptable in accordance with paragraph 5.19.2. The QA inspector observed five each Macroetch samples test temperature at -20C, five each Macroetch samples test temperature at -4C, five each Macroetch samples test temperature at 0C for test plates SW 7-1 which had been etched in accordance with AWS D1.5-2002 paragraph 5.18.2. The samples

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were found to be acceptable in accordance with paragraph 5.19.3.

Caltrans witness lot number B88-121-08 was assigned to test plate SW7-1 for tracking purposes.

The QA inspector observed two each Side Bend tests for test plates for welding procedure specification WP-accordance with AWS D1.5-2002 paragraph 5.18.3. JSW QC personnel Mr. Naoya Takahashi performed tests and recorded results as acceptable in accordance with paragraph 5.19.2. See following lists for test detail.

Welder name and ID	WPS No	position	Test specimen	results
Hidetaka Nishikawa 08-5162	WP-1	3G	Side Bend 1&2	Acceptable
Hidetaka Nishikawa 08-5162	WP-2	1G	Side Bend 1&2	Acceptable
Takatoshi-Inoue 08-5163	WP-1	3G	Side Bend 1&2	Acceptable
Takatoshi-Inoue 08-5163	WP-2	1G	Side Bend 1&2	Acceptable
Yuji-Sugawara 08-5160	WP-1	3G	Side Bend 1&2	Acceptable
Yoshito-Kano 08-5158	WP-1	3G	Side Bend 1&2	Acceptable
Yoshihito-Kano 08-5158	WP-2	1G	Side Bend 1&2	Acceptable
Satoru-Watanabe 08-5159	WP-1	3G	Side Bend 1&2	Acceptable
Satoru-Watanabe 08-5159	WP-2	1G	Side Bend 1&2	Acceptable
Yuji Sugawara 08-5160	WP-2	1G	Side Bend 1&2	Acceptable

Foundry

On this date the QA representative Dong J, Shin arrived at Japan Steel Works (JSW) of Muroran Japan and traveled to JSW foundry, escorted by JSW representative Mr. Yoshihiro Itoh, to monitor the casting Build up welding on West Deviation Saddle casting W2-E1. The welding was performed to build up the thickness of the ribs in areas that were found to not meet the minimum thickness of the contract special provisions. The repair locations and repair details for this casting were submitted as number 000643, revision 02. The JSW welding personnel Mr. Hitoshi Sato, identified as number 69-2697 continued the in process repair welding of Rib1L, repair 2-2 location B-1 with utilizing the Shielded Metal Arc Welding (SMAW) process per the welding procedure specification (WPS) SJ 3026-2. The welding was performed in the 2G (Horizontal) position. The filler metal utilized was identified as 5mm diameter, Class E10016-G, Brand name LB-106. The welding parameters and heat control were monitored by Nikko Inspection Services Quality Control (QC) Mr. Imai at periodic intervals. The minimum preheat temperature of 150 degrees Celsius and maximum interpass temperature of 260 degrees Celsius was verified to meet the WPS requirements by Mr. Imai. The SMAW welding average amperage and voltage by clamp type meter and travel speed were verified to be within the welding procedure specification parameter range of 180 amps to 240 amps, 22 volts to 26 volts and travel speed of 115 to 280 mm per minute by the QA inspector. The work was not completed on this date and appears to meet the minimum requirements of the welding procedure specification and contract documents.

The following castings were also located in the foundry.

Casting T1-1 and T1-3 were in the foundry and casting T1-3 is in the as cast condition with no work performed at the time of inspection.

Casting W2-W1, which was poured on 4/29/08, was still cooling in the mold in the foundry.

Casting W2-E2 was in the NDT area of the foundry and no work was being performed at the time of inspection.

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Summary of Conversations:

QA Inspector Mr. Dong J,Shin has discussed with Mr. Kazunori Sato regarding Procedure qualification test results and follow up document controls.

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.

Inspected By:	Shin,DJ	Quality Assurance Inspector
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Reviewed By:	Lanz,Joe	QA Reviewer
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