

**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 #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003602**Date Inspected:** 22-Aug-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Japan Steel Works**Location:** Muroran, Japan

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

<b>CWI Present:</b>	Yes	No	
<b>Rod Oven in Use:</b>	Yes	No	N/A
<b>Weld Procedures Followed:</b>	Yes	No	N/A
<b>Verified Joint Fit-up:</b>	Yes	No	N/A
<b>Approved WPS:</b>	Yes	No	N/A
<b>Delayed / Cancelled:</b>	Yes	No	N/A
<b>Component:</b>	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 for the West Deviation and the Tower Saddles relative to this project. The following was observed:

**Fabrication Shop # 2**

At the start of the shift the QA inspector traveled to the shop escorted by Kunio Nagaya to perform material identification verification prior to flame cutting the plates into individual components to be utilized for the Tower Saddle identified as T1-3. The layout of the individual components appeared to be completed at this time and appeared to comply with Japan Steel Works, Ltd. (JSW) cutting list. At the conclusion of performing the material verification, the QA inspector reviewed the Mill Test Reports (MTR) and at the conclusion of the QA inspector's review the MTR's appeared to comply with the ASTM Standard A709M.

**Foundry Shop, QA Magnetic Particle Test Verification**

The QA inspector performed Magnetic Particle Testing (MPT) verification of West Deviation Saddle casting W2-E1, exterior surface identified as stamp side. The casting surface was examined using magnetic particle testing for approximately 10% of the surface area examined by Nikko Inspection Services (NIS) QC/NDT technician Mr. Harumi Kohama. The QA inspector performed the magnetic particle testing in accordance with ASTM E709 and the JSW procedure SJ-2878 Revision 1 using a Parker Contour Probe, AC yoke, Model No. DA-400S and SN No. 15763. The QA inspector concurs with the QC/NDT inspector's assessment. The work was completed on this date and the inspections appear to meet the minimum requirements of the contract documents. A magnetic Particle Testing Report (TL-6028) for welds that were tested in accordance with the contract

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requirements was generated on this date.

## Fabrication Shop # 4

Later in the shift at approximately 1030 hours, the QA inspector traveled to the Fabrication Shop # 4 to observe the shop welding, weld inspection and verification of the welding parameters on the structural steel plate components for the West Deviation Saddle identified as W2E2. The Welding was performed by the JSW welding personnel Takao Kawakami ID 08-5079 and Masatugu Kobayashi ID 08-5154 utilizing the Welding Procedure Specification (WPS) SJ-3011-2. The Distortion Control Plan, identified as Document SJ-3109 Revision 3 was also utilized by the Japan Steel Works, Ltd. (JSW) personnel during the production welding of the rib plate to base plate connections identified as EY2-9L and E2Y-10L. The WPS and the Distortion Control Plan were also used as a reference during QC verification of the welding parameters and the monitoring of the weld sequence. The production welding sequence was performed as per Attachment 5, Case 2 Step 3 and Attachment 6, Step 5 of the Distortion Control Plan. The welding was performed in the Flat (1G) Position with the work in the horizontal plane and the weld metal deposited from above.

The consumable utilized by the welding personnel appeared to be a Hobart Brothers Product and the trade name was identified as TM 95K2 which appeared to comply with the AWS Specification A5.29 and the AWS Classification E90T5-K2C H4. The size of the electrode was 1.6 mm in diameter.

The Quality Control (QC) inspection was performed by Intertek Testing Services (ITS) personnel Chung Fu-Kuan who performed the verification the preheat temperatures, welding parameters and the in process weld inspection during this shift. The welding parameters were verified utilizing a Hioki 3109 Clamp Meter, Model RMS and the surfaces temperatures were verified utilizing an Anritsu HA 100E digital surface thermometer during the QC verification. The calibration dates of the measuring instruments utilized by the QC inspector were previously verified by this QA inspector.

Later in the shift this QA inspector observed, at random intervals, the QC inspector 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 for the surface temperatures. 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.

## Mechanical Testing

At approximately 1100 hours the QA inspector traveled to the testing facility to observe and witness the side bend testing of specimens for welder performance qualification tests for the following JSW welding personnel, Yuta Saito, ID 07-2720, Takao-Kawagishi, ID 08-5026 and Makoto Kato, ID 08-5159. The bending of the specimens was performed by Hideo Domon who also verified the size of the specimens which were observed by the QA inspector as follows, 10mm x 25mm x 150mm. At the conclusion of the side bend test Hideo Domon performed a

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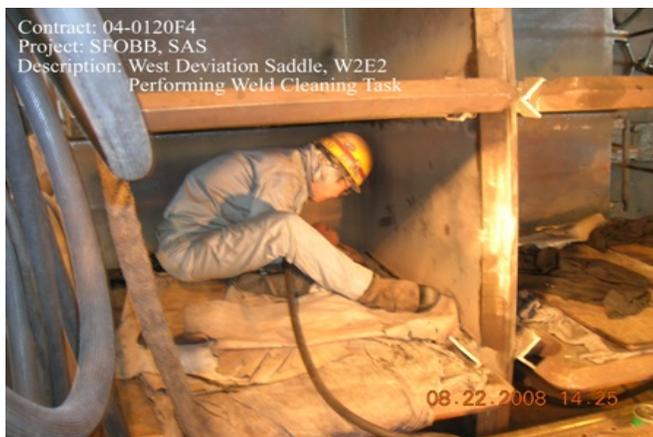
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visual inspection on the tension side of the specimens and no relevant indications were noted by Mr. Domon. The performance, equipment utilized and the interpretation of the specimens appeared to comply with the contract documents.

See Weld Joints in Progress Inspected on Page 4 of this report in regards to QA observation of the production welding parameters recorded during this shift on this date.

The following digital photograph illustrates the observations of the activities performed on this date.



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Item	Weld Identification	Applicable WPS	CWI Name	Amperage	Voltage	TravelSpeed	Preheat Temp	Remarks
1	E2Y-10L	SJ3011-2	C. Fu-Kuan	335 DC	35.5 DC	300 mm/m	200 Degrees C.	Kawakami
2	E2Y-9L	SJ-3011-2	C. Fu-Kuan	320 DC	35 DC	295 mm/m	200 Degrees C.	Kobuta

### Summary of Conversations:

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

### 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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