

**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 #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013401**Date Inspected:** 20-Apr-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR

<b>CWI Name:</b>	M. Gregson, J. Salazar, G. Mundt	<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>	Hinge K Pipe Beams				

**Summary of Items Observed:**

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

**Hinge-K Pipe Beam Assembly 101A-2:**

The QA Inspector witnessed OIW QC Inspector Rob Walters performing Ultrasonic Testing (UT) on the previously completed submerged arc welding (SAW) joint, # WM4-1. The QA Inspector noted that this was a Complete Joint Penetration (CJP), AWS D1.5 B-U7-S, piece mark Fuse 120A-5 to Forging 102A-2 and that the minimum 72 hr. cooling time, prior to the inspection, had expired. QC Inspector Walters explained that he was currently performing the straight beam ultrasonic testing for laminar reflectors, per AWS D1.5 and explained that he had previously performed a calibration on the straight beam search unit. QC Inspector Walters later explained that the straight beam testing had been performed and completed on the entire base metal area that the weld will be tested and no rejectable indications were found. QC Inspector Walters explained that he was currently setting up for calibration, in preparation for the angle beam ultrasonic testing of the weld, with a 60 degree Lucite wedge coupled to a 2.25 MHz frequency transducer.

The QA Inspector witnessed OIW QC Inspector Rob Walters performing Ultrasonic Testing (UT) on the above mentioned SAW joint, # WM4-1. QC Inspector Walters explained that he had previously performed a calibration utilizing an AWS IIW Type 2 Reference Block, in preparation for the angle beam ultrasonic testing of the weld, with a 60 and 70 degree Lucite wedge, coupled to 2.25 MHz frequency transducers. QC Inspector Walters explained that the testing was currently being performed on Face "A", the 102A-2 forging side of the weld axis

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# WELDING INSPECTION REPORT

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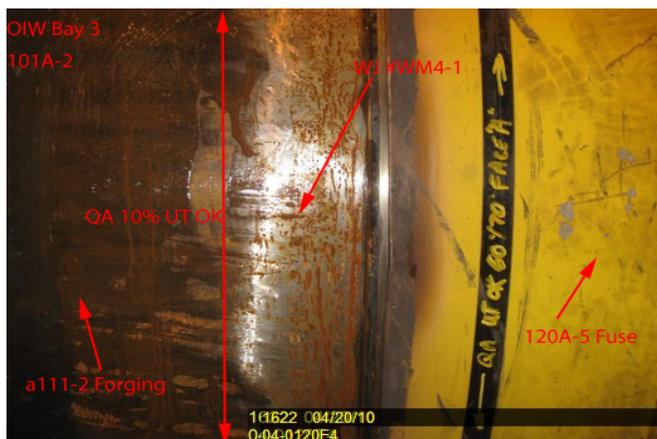
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and no rejectable or recordable indications were found, at this time. QC Inspector Walters explained that the testing will continue with the 60 degree testing angle until complete and he will then perform the testing with a 70 degree angle. QC Inspector Walters later informed the QA Inspector that the testing was complete on Face "A" and no rejectable or recordable indications were found, at this time. QC Inspector Walters then explained that he will now perform the UT on the interior portion, Face "B" of the joint, utilizing a 70 degree testing angle, from both sides of the weld axis. The QA Inspector noted that the UT performed by QC Inspector Walters, appeared to be in compliance with AWS D1.5 and the applicable testing procedure NP-2244-(13)-01.

The QA Inspector was present on this swing shift and performed approximately 10% Ultrasonic Weld Inspection (UT), on the above mentioned weld joint (WJ). The QA Inspector performed the testing from Face "A", on the forging side of the weld axis, utilizing a 60 and 70 degree transducer angle attached to 2.25 MHZ transducers. The QA Inspector had previously performed a calibration check with an AWS D1.5 Type 2 IIW metric calibration block. After the testing was complete, the QA Inspector had found no rejectable or recordable indications and completed an applicable Ultrasonic Testing report (TL 6027). The QA Inspector noted that OIW QC personell were still in process with the UT from Face "B", on the entire WJ. The QA Inspector will continue the inspection when OIW QC personell has finished. See attached picture below.

### Material, Equipment, and Labor Tracking (MELT)

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 4 OIW production personnel and 2 QC Inspectors.



### Summary of Conversations:

As noted above.

### 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 Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Vance,Sean	Quality Assurance Inspector
<b>Reviewed By:</b>	Adame,Joe	QA Reviewer

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