

**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 #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012975**Date Inspected:** 07-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**CWI Name:** M. Gregson, J. Salazar**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:** 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 120A-2:**

The QA Inspector witnessed WID #F17 (Igor Frolov), in-process of performing electro slag welding (ESW), on an additional overlay welding pass, utilizing Soudotape 316L stainless steel consumable strip. The QA Inspector noted that WID #F17 was currently qualified for this and was performing the ESW in the flat position. The QA Inspector noted that the ESW was now approximately 50 % complete.

The QA Inspector noted that Lead QC Inspector Mike Gregson was also present, during this shift, to monitor the ESW. QC Inspector Gregson explained that he had previously recorded in-process welding parameters of 1150 amps and 25.7 volts, with a minimum pre-heat temperature of 150 degrees Fahrenheit. QC Inspector Gregson explained that he had previously recorded a travel speed of 10.5 inches per minute (i.p.m.) and that Welding Procedure Specification (WPS) 7003 was being utilized. The QA Inspector randomly verified a pre-heat temperature of approximately 150 degrees Fahrenheit and verified welding parameters to be in compliance with AWS D1.5 and the applicable WPS 7003. See attached picture below.

**Hinge-K Pipe Beam Assembly 102A-2:**

The QA Inspector witnessed WID #B62 (Marcus Belgarde), performing the submerged arc welding (SAW) on the a110 Base plate to b106 HPS 485W stiffener. The QA Inspector noted that this weld joint was designated as a

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partial joint penetration (AWS D1.5 TC-P4-S), weld joint (WJ) #W2-02 and WID #B62 was performing the SAW in the flat (1G) position. The QA Inspector noted that the SAW fill passes were currently in-process and noted that the OIW approved welding procedure specification (WPS 4020), was being utilized. The QA Inspector noted that QC Inspector Jose´ Salazar, was present and QC Inspector Salazar explained that the in-process welding parameters/pre-heat temperatures, were intermittently verified. QC Inspector Salazar explained that the average welding parameters for the SAW fill passes, currently in process, were recorded at 580 amps/32.5 volts, with a pre-heat of approximately 350 degrees Fahrenheit (177 C) and travel speed of 16 inches per minute (i.p.m). The QA Inspector randomly verified pre-heat of approximately 350 degrees Fahrenheit (177 C) and welding parameters to be in compliance with the applicable WPS 4020. The QA Inspector noted that the SAW appeared to be in compliance with AWS D1.5 and the applicable WPS.

### 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 1 QC Inspector. The QA Inspector noted the following personell were present at AG Machine Works: 1 AG Machinist and 1 AG Supervisor.



### 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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