

**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-006548**Date Inspected:** 04-May-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Mike Gregson, Rob Walters**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:

## OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Assembly 102A-1: 5/04/09

a111-1 Forging to a110-1 Base Plate

QA Inspector noticed the weld repair backgouge was completed by OIW welder #T23, Mr. John Tellone, on this CJP (AWS D1.5 TC-U9a-S) a11-1 forging to a110-2 base plate, designated as weld joint #W2-12 & W2-13 and was sitting idle, pending SAW welding. QA Inspector spoke with QC Inspector Rob Walters and Mr. Walters explained the backgouge depth/length was verified and 100% magnetic particle inspection was performed, which is in compliance with the applicable welding procedure specification (WPS 3046).

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that he wasn't sure when the SAW would begin on this weld repair.

Hinge-K Pipe Beam Assembly 102A-2: 5/04/09

a111-2 Forging to a110-2 Base Plate

QA Inspector noticed this assembly 102A-2 was sitting idle, with a pending weld repair on the CJP (AWS D1.5

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## WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

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TC-U9a-S) a111-2 forging to a110-2 base plate, designated as weld joint #W2-12 & W2-13.

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that he wasn't sure when the excavation would begin on this weld joint.

Hinge-K Pipe Beam Assembly 102A-3: 5/04/09

a111-3 Forging to a110-3 Base Plate

QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-3 pipe forging to a110-3 base plate, for pipe beam assembly 102A-3 was complete and sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection. QA Inspector noticed 100% preliminary ultrasonic weld inspection was completed by OIW QC Inspectors and no rejectable indications were found.

Hinge-K Pipe Beam Assembly 102A-4: 5/04/09

a111-4 Forging to a110-4 Base Plate

QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-4 pipe forging to a110-4 base plate, for pipe beam assembly 102A-4 was complete and was sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection. QA Inspector noticed 100% preliminary ultrasonic weld inspection was completed by OIW QC Inspectors and no rejectable indications were found.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 5/04/09

a124-6 Half Fuse to a124-7 Half Fuse

QA Inspector noticed this fuse assembly 120A-1 was sitting idle in OIW Bay 3, pending the stainless steel overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 5/04/09

a124-3 Half Fuse to a124-11 Half Fuse

QA Inspector noticed this completed fuse assembly 120A-2 was sitting idle, pending 100% final ultrasonic weld inspection on the CJP (AWS D1.5 B-U3c-S) a124-3 half fuse to a124-11 half fuse weld joint.

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that he wasn't sure when the final ultrasonic testing would begin on this weld repair.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 5/04/09

a124-12 Half Fuse to a124-10 Half Fuse

A & G Machining

QA Inspector arrived at A&G Machining on this date to witness the initial set-up of fuse assembly 120A-3 in the horizontal lathe, in preparation for rough machining and to meet OIW project manager Bill Pender and witness OIW Machinist perform random outside diameter roundness checks with a dial indicator.

After arriving at A&G Machining, QA Inspector noticed the assembly 120A-3 had been previously set-up in the horizontal lathe by A&G machinist, in preparation for rough machining, but OIW project manager Bill Pender and OIW machinist were not present to verify random outside diameter roundness checks. A&G machinist explained to QA Inspector that project manager Bill Pender had called A&G, approximately ten minutes prior to QA Inspector arriving and cancelled the 10:00 A.M. appointment, on this date. A&G machinist explained to QA Inspector that Mr. Bill Pender and OIW machinist would be arriving on the following day, 5/05/09. See assembly 120A-3 set up in horizontal lathe, in attached picture below.....

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## WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

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Hinge-K Pipe Beam Fuse Assembly 120A-4: 5/04/09

a124-13 Half Fuse to a124-4 Half Fuse

QA Inspector randomly witnessed welder #S53, Mr. Jerry Shepherd, perform submerged arc welding (SAW) on CJP (AWS D1.5 B-U3c-S), half fuse pipe assembly, (piece mark identified as a124-13), to half fuse pipe assembly, (piece mark identified as a124-4), in the flat position (1G).

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that the OIW welder #S53, was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020).

QA Inspector noticed QC Inspector's Mike Gregson and Rob Walters were present and monitoring in-process welding parameters (amps/volts) and pre-heat temperatures, verifying Mr. Jerry Shepherd was in compliance with the applicable welding procedure specification (WPS 4020).

QA Inspector verified Mr. Jerry Shepherd was currently qualified for this welding process/position and performed a random pre-heat check and recorded temperatures of approximately 350 degrees Fahrenheit. QA Inspector also recorded random, in-process welding parameters (amps/volts) of 580 amps and 29 volts, which is in compliance with the OIW welding procedure specification (WPS 4020). See pre-heating pictures attached below.....

Hinge-K Pipe Beam Sub-Assembly a124-2: 5/04/09

a125 & b125 Ring Stiffeners to a124-2 Half Fuse

QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian, perform submerged arc welding (SAW) on PJP (AWS D1.5 TC-P5-S) weld joint #WM3-08 internal ring stiffener, (piece mark identified as a125), to half fuse pipe sub-assembly, (piece mark identified as a124-2), in the flat position (1G).

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that Mr. Tim O'Brian was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020).

QA Inspector also noticed Mr. Mike Gregson and QC Inspector Rob Walters were present and monitoring in-process welding parameters (amps/volts) and pre-heat temperatures, verifying Mr. Tim O'Brian was in compliance with the applicable welding procedure specification (WPS 4020).

QA Inspector verified Mr. Tim O'Brian was currently qualified for this welding process/position and performed a random pre-heat check and recorded temperatures of approximately 350 degrees Fahrenheit. QA Inspector also recorded random, in-process welding parameters (amps/volts) of 600 amps and 31 volts, which is in compliance with the OIW welding procedure specification (WPS 4020).

QA Inspector noticed that Mr. Tim O'Brian would complete this weld joint #WM3-08 by end of shift and the weld joint identified as WM3-06 would begin on swing shift, on this date.

Hinge-K Pipe Beam Sub-Assembly a124-09: 5/04/09

a125 & b125 Ring Stiffeners to a124-14 Half Fuse

QA Inspector noticed this a fuse sub-assembly a124-09 had been previously transferred from the OIW South storage yard to OIW fabrication shop and was sitting idle, pending SAW of the internal ring stiffeners, a125 and b125.

Hinge-K Pipe Beam Sub-Assembly a124-14: 5/04/09

a125 & b125 Ring Stiffeners to a124-14 Half Fuse

QA Inspector noticed this a fuse sub-assembly a124-14 had been previously transferred from the OIW South storage yard to OIW fabrication shop and was sitting idle, pending SAW of the internal ring stiffeners, a125 and

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# WELDING INSPECTION REPORT

( Continued Page 4 of 4 )

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b125.

### Material, Equipment, and Labor Tracking

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors. The following was observed at A & G Machine: 1 A&G supervisor and 1 A&G machinist using a horizontal lathe.



### 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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