DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006343
Date Inspected: 21-Apr-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
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: 4/21/09
a111-1 Forging to a110-1 Base Plate
QA Inspector noticed this assembly 102A-1 remained idle, with a pending non-critical weld repair, on the a111-1 to a110-1 base plate CJP weld.

Hinge-K Pipe Beam Assembly 102A-2: 4/21/09
a111-2 Forging to a110-2 Base Plate
QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-2 pipe forging to a110-2 base plate, for pipe beam assembly 102A-2 was complete and sitting idle.
QA Inspector noticed that 100% preliminary ultrasonic weld testing was performed by QC Inspector Rob Walters on 4/17/09 and no rejectable indications were found, as noted on the part by Mr. Rob Walters.

Hinge-K Pipe Beam Assembly 102A-3: 4/21/09

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.

Hinge-K Pipe Beam Assembly 102A-4: 4/21/09
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.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 4/21/09
a124-6 Half Fuse to a124-7 Half Fuse
A & G Machining
QA Inspector arrived at A & G Machining on this date, to randomly witness the in-process machining of this fuse assembly 120A-1.
QA Inspector noticed the first cut machining pass was complete and the A & G machinist explained that this first pass was cut to a depth of .150" (3.8mm) deep.
A & G Machinist explained that the second cut would also be .150" (3.8mm) deep and a third and final pass would be needed to achieve the desired results of 1903mm in diameter, which is in accordance to the applicable contract requirements. See machining pictures below…..

Hinge-K Pipe Beam Fuse Assembly 120A-2: 4/21/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector noticed the fuse splice (a124-3 to a124-11) was complete and QC Inspector Rob Walters was in-process of ultrasonic weld inspection on this CJP (AWS D1.5 B-U3c-S) weld joint.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 4/21/09
a124-12 Half Fuse to a124-10 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 a124-12), to half fuse pipe assembly, (piece mark identified as a124-10), 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, which is in compliance with the OIW welding procedure specification (WPS 4020).

Hinge-K Pipe Beam Sub-Assembly a124-4: 4/21/09
a125 Ring Stiffener to a124-4 Half Fuse

WELDING INSPECTION REPORT

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QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian perform submerged arc welding (SAW) on PJP (AWS D1.5 TC-P5-S) internal ring stiffener, (piece mark identified as a125), to half fuse pipe sub-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 #O6, was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020).
QA Inspector 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, which is in compliance with the OIW welding procedure specification (WPS 4020).

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.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer