

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-006994**Date Inspected:** 28-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: 5/28/09

a111-1 Forging to a110-1 Base Plate

QA Inspector noticed this assembly 102A-1 was currently sitting idle, with a pending critical weld repair on weld joint #W2-12/W2-13.

Hinge-K Pipe Beam Assembly 102A-2: 5/28/09

a111-2 Forging to a110-2 Base Plate

QA Inspector noticed this assembly 102A-2 was sitting idle, with a pending non-critical weld repair.

Hinge-K Pipe Beam Assembly 102A-3: 5/28/09

a111-3 Forging to a110-3 Base Plate

QA Inspector noticed this assembly 102A-3 was sitting idle, with a pending non-critical weld repair.

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Hinge-K Pipe Beam Assembly 102A-4: 5/28/09

a111-4 Forging to a110-4 Base Plate

QA Inspector noticed this assembly 102A-4 was sitting idle.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 5/28/09

a124-6 Half Fuse to a124-7 Half Fuse

QA Inspector noticed this fuse assembly 120A-1 was sitting idle in OIW Bay 6, pending the stainless steel overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 5/28/09

a124-3 Half Fuse to a124-11 Half Fuse

QA Inspector noticed this fuse assembly 120A-2 was sitting idle, with a pending third time critical weld repair.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 5/28/09

a124-12 Half Fuse to a124-10 Half Fuse

QA Inspector noticed that the first stainless steel overlay welding process had begun, on this fuse assembly 120A-3. QA Inspector witnessed welder #J6, Mr. Craig Jacobson performing electro slag welding (ESW) in the flat position, utilizing Soudokay brand Soudotape 309L stainless steel consumable strip. QA Inspector noticed QC Inspector's Mike Gregson and Rob Walters were present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QA Inspector spoke with QC Inspector Rob Walters and Mr. Rob Walters explained that welding amps were recorded as 1260 amps/23.5 volts, with a travel speed of 267mm/minute and a pre-heat temperature of approximately 225 Fahrenheit. QA Inspector verified Mr. Craig Jacobson was currently qualified for this welding process/position and randomly recorded pre-heat temperatures of approximately 225 Fahrenheit. QA Inspector noted that Mr. Craig Jacobson appeared to be in compliance with the applicable approved welding procedure specification (WPS 7003). See picture below of fuse assemble 120A-3.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 5/28/09

a124-13 Half Fuse to a124-4 Half Fuse

QA Inspector arrived at A&G Machining on this date and witnessed A&G performing the third and final cut pass, for rough machining on this fuse assembly 120A-4. QA Inspector spoke with A&G machinist and A&G explained that this final cut pass was approximately .160" (4mm) and would probably be completed on 5/29/09. A&G explained to QA Inspector that a final outside diameter of 1903mm would be maintained and that an OIW machinist would be arriving on 6/4/09 to verify dimensional outside diameter measurements and transfer this fuse assembly 120A-4, back to OIW fabrication shop. QA Inspector noted that once this assembly 120A-4 arrives at OIW fabrication shop, 100% magnetic particle testing will be performed by qualified OIW QC Inspectors and 100% final ultrasonic weld inspection will be performed on the CJP weld splice. QA Inspector noted that A&G appeared to be in compliance with contract requirements. See picture below of fuse assembly 120A-4, in process of rough machining.

Hinge-K Pipe Beam Fuse Assembly 120A-5: 5/28/09

a124-14 Half Fuse to a124-2 Half Fuse

QA Inspector noticed that welder # T6, Mr. Craig Jacobsen had previously completed the submerged arc welding on the a124-14 half fuse to a124-2 half fuse, CJP weld splice, designated as weld joint #WM3-18 and QC Inspector Rob Walters had performed 100% preliminary ultrasonic weld inspection on this CJP weld splice. QA

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Inspector noticed this fuse assembly 120A-5 was previously transferred to the OIW storage yard and was sitting idle, in preparation for transfer to A&G Machining, for rough machining on the exterior.

Hinge-K Pipe Beam Sub-Assembly a124-1: 5/28/09

a125 & b125 Ring Stiffeners to a124-1 Half Fuse

QA Inspector randomly noticed that OIW welder #O6, Mr. Tim O'Brian, had completed the submerged arc welding on the internal ring stiffener, a125/b125 and this sub-assembly a124-1 was sitting idle.

Hinge-K Pipe Beam Sub-Assembly a124-5: 5/28/09

a125 & b125 Ring Stiffeners to a124-1 Half Fuse

QA Inspector noticed welder #O6 performing initial pre-heating, in preparation for submerged arc welding on the first internal ring stiffener. QA Inspector noticed QC Inspector Rob Walters was present to verify pre heat temperatures and in process welding parameters, were in accordance with the applicable welding procedure specification (WPS 4020)

Hinge-K Pipe Beam Sub-Assembly a124-9: 5/28/09

a125 & b125 Ring Stiffeners to a124-9 Half Fuse

QA Inspector noticed the submerged arc welding was complete on the internal ring stiffeners and this assembly a124-9 was sitting idle.

OIW South Storage Yard: 5/28/09

QA Inspector noticed the following half-fuse sub assemblies were sitting idle, pending submerged arc welding on the internal stiffener rings, piece marks identified as a125 & b125: a124-8, a124-15 and a124-16.

Bolt Sampling: 5/28/09

Portland Bolt

QA Inspector arrived at Portland Bolt & Manufacturing Co., INC., in Portland, OR. on this date, to sample bolts prior to shipping, to Thompson Metal Fab, in Vancouver, WA.. QA Inspector spoke with Portland Bolt representative, Dane McKinon and Mr. McKinon explained that a total of 1544 bolts/nuts/washers would be sent to Thompson Metal Fab, pending state lab results and the following would be sampled and sent to state lab for testing:

5 ea.-1 ¼"-7x4 ½", 1ea.-1 ¼"-7x3", 5ea.-1 ¼"-7x 3 ½", 1ea.-1 ¼"-7x4", 3ea.-1 ¼"-7x7 ½", 3ea.-1 ¼"-7x5 ½", 3ea.-1 ¼"-7x5", 3ea.-1 ¼"-7x4 ¼" bolts and 24ea. nuts/washers.

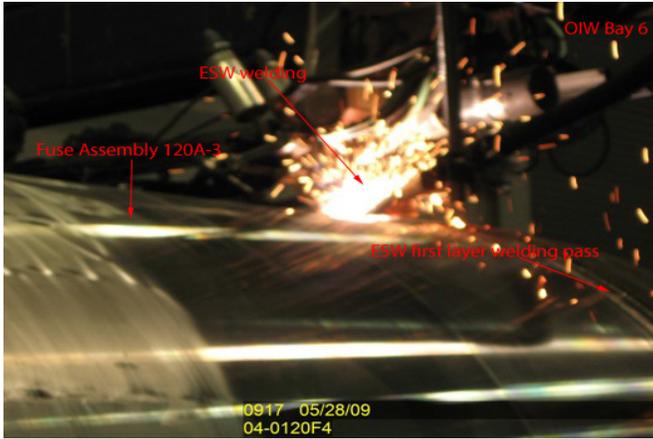
QA Inspector verified the applicable material test reports, assigned lot # B251-021-09 and noticed the above items were packaged and ready to ship to state lab for testing. Mr. McKinon explained to QA Inspector that these items would probably ship on 5/29/09. QA Inspector explained to Mr. McKinon these items would be released to Thompson Metal Fab, pending the state lab testing results. See applicable bolt sampling report (TL102) for additional details.

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 were present at A&G Machining: 1 A&G supervisor and 1 A&G machinist using a horizontal lathe.

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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
