

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-006636**Date Inspected:** 07-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: 5/07/09

a111-1 Forging to a110-1 Base Plate

QA Inspector randomly witnessed welder #J6, Mr. Craig Jacobsen, perform submerged arc welding on (AWS D1.5 TC-U9a-S) a111-1 pipe forging to a110-1 base plate weld joint designated as #W2-12/W2-13, in the flat position (1G). QA Inspector noted this was a first time non-critical weld repair and QA Inspector noticed QC Inspector's Mike Gregson and Rob Walters were present to monitor in-process welding parameters (amps/volts) and pre-heat temperatures. QA Inspector verified Mr. Craig Jacobsen 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 applicable welding procedure specification (WPS 3046).

Hinge-K Pipe Beam Assembly 102A-2: 5/07/09

a111-2 Forging to a110-2 Base Plate

QA Inspector randomly witnessed welder #T23, Mr. John Tellone, perform submerged arc welding (SAW)

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

multi-pass 25mm fillet welds on plate stiffener (a107) to base plate (a110-2), weld joint designated as #W2-15, in the flat position (1F). 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. John Tellone was in compliance with the applicable welding procedure specification (WPS 4020).

QA Inspector verified Mr. John Tellone 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).

Hinge-K Pipe Beam Assembly 102A-3: 5/07/09

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: 5/07/09

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: 5/07/09

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: 5/07/09

a124-3 Half Fuse to a124-11 Half Fuse

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

Hinge-K Pipe Beam Fuse Assembly 120A-3: 5/07/09

a124-12 Half Fuse to a124-10 Half Fuse

A & G Machining

QA Lead Inspector Joe Adame spoke with A&G Machine Supervisor Gary Schmale and inquired on the work in progress on Fuse assembly 120A-3. Mr. Schmale informed the QA Lead that A&G have completed the 1st rough machining pass of .160 at the end of the shift on 5-6-09. As of today A&G are in progress with a 2nd pass of .160. Mr. Schmale stated that the 2nd pass should be complete by the end of the shift or tomorrow morning (5-8-09).

Hinge-K Pipe Beam Fuse Assembly 120A-4: 5/07/09

a124-13 Half Fuse to a124-4 Half Fuse

QA Inspector noticed the a124-13 half fuse to a124-4 half fuse, CJP weld splice, designated as weld joint #WM3-18, was complete and sitting idle, pending 100% preliminary ultrasonic weld inspection, by OIW QC

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

personell.

Hinge-K Pipe Beam Sub-Assembly a124-2: 5/07/09

a125 & b125 Ring Stiffeners to a124-2 Half Fuse

QA Inspector noticed that the welding on the internal ring stiffeners was complete and this sub-assembly a124-2 was sitting idle, pending final non-destructive testing by OIW QC personell.

Hinge-K Pipe Beam Sub-Assembly a124-9: 5/06/09

a125 & b125 Ring Stiffeners to a124-9 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: 5/07/09

a125 & b125 Ring Stiffeners to a124-14 Half Fuse

QA Inspector randomly witnessed OIW welder #06, Mr. Tim O'Brian, perform initial pre-heat on assembly a124-14, in preparation for fitting the first internal ring stiffener.

QA Inspector noticed that QC Inspector Rob Walters was present to verify pre-heat temperature, prior to submerged arc weld tacking and to verify 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, prior to tacking and QC Inspector Mike Gregson explained that a OIW QC Inspector would be present to monitor in-process welding parameters (amps/volts) and continuous pre-heat temperatures.

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 by QA Inspector Joe Adame: 1 A&G supervisor and 1 A&G machinist using a horizontal lathe.

Summary of Conversations:

QA Lead Inspector Joe Adame spoke with OIW Project Manager Bill Pender regarding performing a 2nd time repair to remove a rejectable indication on Fuse assembly 120A-2 (WJ #WM3-18). On 5-6-09, QA Inspector Sean Vance had discovered a class A indication with a decibel rating of +4, with a 60 degree transducer angle, located approximately 48mm deep. This weld location previously had a R1 repair performed. OIW QC Inspector Rob Walters had UT inspected the area after the weld had cooled to ambient temperature, but had not verified the weld repair per the cooling time (72 hrs), as described in AWS D1.5 Section 12.16.4. The QA Lead spoke to OIW QC Lead Inspector Mike Gregson and inquired why the UT was not verified after the cooling period. Mr. Gregson stated that he was under the assumption that OIW QC would do a formal final UT inspection after rough machining is complete. QA Lead Inspector Joe Adame informed Mr. Pender of the conversation with the QC Lead. Mr. Pender stated that was incorrect and OIW QC are to perform all FCM UT per the cooling time as described in Section 12.16.4. Mr. Pender stated that OIW would like to get the majority of all repairs before rough machining of the fuses. The QA Lead also inquired if this would impact the shipping schedule for rough machining. Mr. Pender stated that OIW would have another fuse available to be sent to the outside machine facility and the numerical order of the fuses is not a major concern.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

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
