

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-007411**Date Inspected:** 25-Jun-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, Jose 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:

OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Assembly 102A-1: 6/25/09

a111-1 Forging to a110-1 Base Plate

QA Inspector witnessed welder #H49, Mr. Rick Hinkle, FCAW tacking of various stiffener plates, to the base plate, piece mark identified as a110-1, for assembly 102A-1, in the flat position. QA Inspector noted Mr. Rick Hinkle was performing pre-heat, utilizing a single torch and recorded temperatures of approximately 350 F (176C).

QA Inspector noticed QC Inspector Jose Salazar was present to monitor in-process welding parameters (amps/volts) and continuous pre-heat temperatures. QA Inspector noted Mr. Rick Hinkle appeared to be tack welding in accordance with the applicable approved welding procedure specification (WPS 3049).

Hinge-K Pipe Beam Assembly 102A-2: 6/25/09

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.

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Hinge-K Pipe Beam Assembly 102A-3: 6/25/09

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.

Hinge-K Pipe Beam Assembly 102A-4: 6/25/09

a111-4 Forging to a110-4 Base Plate

QA Inspector noticed this assembly 102A-4 had been previously placed in position and welder #T6, Mr. Craig Jacobson, was in process of performing submerged arc welding on the PJP AWS D1.5 TC-P5-S, weld root pass, a111-4 forging to c108 stiffener plate, designated as weld joint # W1-131, in the flat position. QA verified Mr. Jacobson was currently qualified for this process/position and noted that Mr. Jacobson was utilizing OIW approved welding procedure specification (WPS 4016). QA Inspector randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit and noticed QC Inspector Jose Salazar was present to monitor in-process welding parameters (amps/volts). QA Inspector noted that Mr. Salazar had recorded in-process welding parameters of 450 amps and 29 volts, which appears to be in compliance with the applicable welding procedure specification.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 6/25/09

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, 120A-6: 6/25/09

(a124-3 Half Fuse to a124-11 Half Fuse) & (a124-1 Half Fuse to a124-9 Half Fuse)

A & G Machining

QA Inspector arrived at A&G Machining, on this date and A&G explained that this fuse assembly 120A-6 rough machining had been previously completed and was in-process of being transferred back to OIW fabrication shop. QA Inspector witnessed the fuse assembly 120A-6 being loaded onto a trailer, in preparation for transfer back to OIW and fuse assembly 120A-2 being placed in the horizontal lathe, in preparation for rough machining. A&G explained that roundness measurements would be taken by A&G machinist and OIW machinist would be arriving later in the afternoon, to verify measurements and potentially release this fuse assembly 120A-2 to A&G, to begin rough machining, on this date. A&G also explained that final outside diameter measurements were taken by A&G, on fuse assembly 120A-6 and were verified by OIW machinist on 6/24/09, as shown below and OIW released this fuse assembly 120A-6. QA Inspector noted that these final outside diameter measurements appeared to be in compliance with the contract requirements of 1900mm, final outside diameter after rough machining (+/- 3mm). See attached pictures below of fuse assemblies 120A-2 and 120A-6.

Final outside diameter measurements of fuse assembly 120A-6:

End-1902.76mm

1902.89mm

1902.81mm

1902.81mm

1902.81mm

1902.76mm

1902.66mm

1902.81mm

End-1902.71mm

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Hinge-K Pipe Beam Fuse Assembly 120A-3: 6/25/09

a124-12 Half Fuse to a124-10 Half Fuse

QA Inspector noticed that the stainless steel overlay welding (ESW) was complete on this fuse assembly 120A-3 and was sitting idle, in OIW Bay 3.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 6/25/09

a124-13 Half Fuse to a124-4 Half Fuse

QA Inspector noticed that no EWS overlay was performed on this fuse assembly 120A-4, on this date and was sitting idle.

Hinge-K Pipe Beam Fuse Assembly 120A-5: 6/25/09

a124-2 Half Fuse to a124-14 Half Fuse

QA Inspector noticed this fuse assembly 120A-5 was sitting idle, pending the ESW overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-7: 6/25/09

a124-5 Half Fuse to a124-15 Half Fuse

QA Inspector noticed the half-fuse sub-assemblies identified as a124-5 and a124-15 were fit-up/tack welded and was sitting idle.

Hinge-K Pipe Beam Sub-Assembly a124-16: 6/25/09

a125 & b125 Ring Stiffeners to a124-16 Half Fuse

QA Inspector randomly witnessed OIW welder #06, Mr. Tim O'Brian, performing submerged arc welding on the b125 internal ring stiffener to a124-16 half fuse, designated as weld joint #WM3-03. QA Inspector noticed the submerged arc welding was being performed in the flat position and verified Mr. Tim O'Brian was currently qualified for this welding process/position and randomly recorded pre-heat temperatures of approximately 350 F, which is in accordance with the applicable welding procedure specification (WPS 4020). QA Inspector randomly recorded in-process welding parameters of 360 amps and 27 volts and noticed that QC Inspector Jose Salazar was present to randomly verify in-process welding parameters (amps/volts) and pre-heat temperatures. QA Inspector noted that the submerged arc welding being performed by Mr. Tim O'Brian, appeared to be in compliance with the applicable 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 personell were present at A&G: 1A&G supervisor and 1 A&G machinist

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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
