

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-007108**Date Inspected:** 09-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, 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: 6/9/09

a111-1 Forging to a110-1 Base Plate

QA Inspector noticed that the critical weld repair (CWR-003 Rev. #1), had been previously completed on swing shift and was sitting idle.

Hinge-K Pipe Beam Assembly 102A-2: 6/9/09

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: 6/9/09

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: 6/9/09

a111-4 Forging to a110-4 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, for assembly 102A-4, 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 Rob Walters 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 Fuse Assembly 120A-1: 6/9/09

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: 6/9/09

a124-3 Half Fuse to a124-11 Half Fuse

QA Inspector noticed this assembly 120A-2 was sitting idle.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 6/9/09

a124-12 Half Fuse to a124-10 Half Fuse

QA Inspector noticed that the stainless steel overlay welding was in-process, on this fuse assembly 120A-3. QA Inspector witnessed welder #F17, Mr. Igor Frolov, performing electro slag welding (ESW) in the flat position, utilizing Soudokay brand Soudotape 316L stainless steel consumable strip. QA Inspector noted the first and second ESW welding passes were complete, utilizing Soudokay brand Soudotape 309L/316L stainless steel consumable strip and the third layer passes were in-process, approximately 50% complete. 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 1300 amps/26 volts, with and a pre-heat temperature of approximately 70 Fahrenheit. QA Inspector verified Mr. Craig Jacobson was currently qualified for this welding process/position and randomly recorded pre-heat temperatures of approximately 70 Fahrenheit. QA Inspector noted that Mr. Craig Jacobson appeared to be in compliance with the applicable approved welding procedure specification (WPS 7003).

Hinge-K Pipe Beam Fuse Assembly 120A-4: 6/9/09

a124-13 Half Fuse to a124-4 Half Fuse

QA Inspector noticed that this fuse assembly 120A-4 was sitting idle.

Hinge-K Pipe Beam Fuse Assembly 120A-5: 6/9/09

a124-14 Half Fuse to a124-2 Half Fuse

A&G Machining

QA Inspector arrived at A&G Machining, on this date and noticed that this fuse assembly 120A-5 had been previously placed in a horizontal lathe and the rough machining was in-process. QA Inspector spoke with A&G Machinist and A&G explained that OIW machinist had previously completed the variation of flatness measurements on the outside diameter of assembly 120A-5 and OIW machinist verbally gave A&G machinist

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approval to begin rough machining on 6/8/09. A&G machinist explained to QA Inspector that the first cut pass was in-process and was approximately .160" (4mm) deep and would probably require a total of three cut passes to achieve the desired results of a finished diameter of 1903mm. QA Inspector noted that once A&G completes the rough machining and fuse assembly 120A-5 arrives back to OIW, OIW QC Inspectors will perform 100% final ultrasonic weld inspection on the CJP butt splice. See attached picture below of fuse assembly 120A-5.

Hinge-K Pipe Beam Fuse Assembly 120A-6: 6/9/09

a124-1 Half Fuse to a124-9 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 a124-1), to half fuse pipe assembly, (piece mark identified as a124-9), 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 650 amps and 35 volts, which is in compliance with the OIW welding procedure specification (WPS 4020).

Hinge-K Pipe Beam Sub-Assembly a124-5: 6/9/09

a125 & b125 Ring Stiffeners to a124-5 Half Fuse

QA Inspector noticed the submerged arc welding on the internal ring stiffeners was complete and this sub-assembly a124-5 was sitting idle.

Hinge-K Pipe Beam Sub-Assembly a124-15: 6/9/09

a125 & b125 Ring Stiffeners to a124-15 Half Fuse

QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian, performing submerged arc welding on the a125 internal ring stiffener to a124-15 half fuse, designated as weld joint #WM3-13. 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 380 amps and 26 volts and noticed that QC Inspector Rob Walters 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).

OIW South Storage Yard: 6/9/09

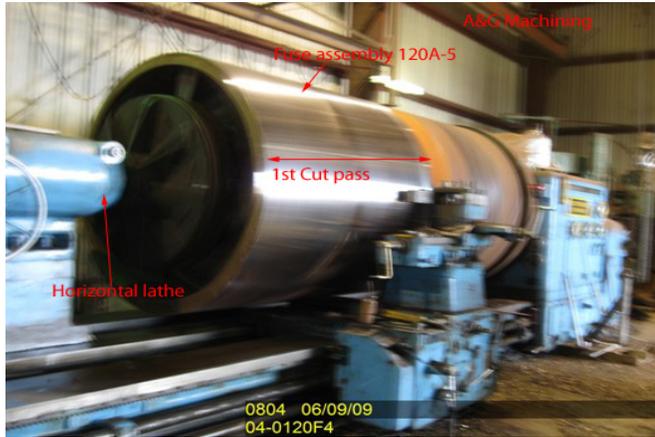
QA Inspector noticed the following half-fuse sub assemblies were sitting idle, pending submerged arc welding on the internal stiffener rings, piece marks identified as a125 & b125: a124-8 and a124-16.

Material, Equipment, and Labor Tracking

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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



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
