

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-008396**Date Inspected:** 06-Aug-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: 8/6/09

a111-1 Forging to a110-1 Base Plate

QA Inspector noticed this assembly 102A-1 had been previously placed in position and welder #O6, Mr. Tim O'Brian, was in process of performing submerged arc welding, on the f108 stiffener plate to a111-1 forging, designated as weld joint # W1-139, in the flat position. QA Inspector noted that this weld joint was designated as AWS D1.5 TC-P5-S and verified Mr. O'Brian was currently qualified for this process/position. QA Inspector noted that Mr. O'Brian was utilizing OIW approved welding procedure specification (WPS 4016) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit. QA Inspector noticed QC Inspector Jose Salazar was present to monitor in-process welding parameters (amps/volts) and noted that Mr. Salazar had previously recorded in-process welding parameters of 430 amps and 29 volts, which appears to be in compliance with the applicable welding procedure specification and contract requirements.

QA Inspector noticed welder #T23, Mr. John Tellone, was in process of performing submerged arc welding, on the d107 stiffener plate to a111-1 forging, designated as weld joint # W1-154, in the flat position. QA Inspector noted

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that this weld joint was designated as AWS D1.5 TC-P5-S and verified Mr. Tellone was currently qualified for this process/position. QA Inspector noted that Mr. Tellone was utilizing OIW approved welding procedure specification (WPS 4016) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit. QA Inspector noticed QC Inspector Jose Salazar was present to monitor in-process welding parameters (amps/volts) and noted that Mr. Salazar had previously recorded in-process welding parameters of 563 amps and 35volts, which appears to be in compliance with the applicable welding procedure specification and contract requirements.

Hinge-K Pipe Beam Assembly 102A-3: 8/6/09

a111-3 Forging to a110-3 Base Plate

QA Inspector noticed welder #J6, Mr. Craig Jacobsen had previously completed the flux core arc welding (FCAW) on the critical weld repair (CWR #2244-006), a111-3 forging to a110-3 base plate, designated as weld joint #W2-13 and 100% preliminary ultrasonic weld inspection had been performed by OIW QC Inspector Rob Walters. QA Inspector spoke with QC Inspector Rob Walters and Mr. Walters explained that the inspection was performed utilizing a 60/70 degree transducer from face "A" and a 60 degree transducer from face "B" and no rejectable indications were found.

Mr. Walters also explained that final ultrasonic weld inspection will be performed after the required 72hrs. cooling time, per AWS D1.5 and contract requirements. See attached picture below.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)

Hinge-K Pipe Beam Fuse Assembly 120A-1: 8/6/09

a124-6 Half Fuse to a124-7 Half Fuse

QA Inspector noticed that the stainless steel overlay welding was previously completed and welder #F17, Mr. Igor Frolov, was performing FCAW repairs on the completed overlay. QA Inspector noticed Mr. Frolov had performed the weld repairs on various "underfilled" weld areas on the completed overlay. QA Inspector noted that QC Inspector Jose Salazar was present and had recorded in-process welding parameters of 160 amps/24.6 volts and pre-heat temperatures of 120 degrees Fahrenheit, which is in accordance with the applicable welding procedure specification (WPS 3293). QA Inspector verified Mr. Frolov was qualified for this process/position and noted that Mr. Frolov appeared to be in compliance with the approved WPS and contract requirements. QA Inspector noted that this assembly 120A-1 was ready for the transfer to AG Machining, for final machining on the weld overlay, on this date.

A&G Machining

Hinge-K Pipe Beam Fuse Assembly 120A-7: 8/6/09

a124-5 Half Fuse to a124-15 Half Fuse

QA Inspector arrived at AG Machining, on this date and noticed that OIW had previously transferred fuse assembly 120A-7 to AG and this assembly had been placed in a horizontal lathe, in preparation for rough machining. AG machinist explained that OIW had previously verified lathe set-up and documented the circumference/variations of flatness and released this fuse assembly to A&G, for rough machining. AG explained that rough machining would start on 8/10/09.

Note: QA Inspector spoke with AG machinist and AG explained that the "trial" machining on the previous fuse assembly 120A-3 had been completed to a outside diameter of 1921.5mm and OIW had picked up this fuse assembly 120A-3 and transferred back to OIW, on this date. QA Inspector noted that OIW QC Inspectors will then perform preliminary inspections on the ESW weld passes, on the fuse assembly 120A-3 and perform any

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necessary welding/grinding repairs on the overlay. Once accepted by OIW, this fuse assembly 120A-3 will be eventually transferred back to AG Machining and AG will machine a final outside diameter of 1920mm (+/- 1mm), per contract requirements and OIW approved drawings. See attached picture below.

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 QA Inspector observed at AG Machining: 1 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
