

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-009274**Date Inspected:** 29-Sep-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-2: 9/29/09

a111-2 Forging to a110-2 Base Plate

QA Inspector noticed that welder #O6, Mr. Tim O'Brian and #J6, Mr. Craig Jacobson, were in-process of grinding and performing weld clean-up, on the PJP and fillet welds stiffeners to a111-2 forging and a107/b106/ab106 stiffeners. QA Inspector spoke with lead QC Inspector Mike Gregson and Mr. Gregson explained that the blending and weld clean-up was being performed on the weld transitions and weld spatter/undersize welds were being repaired, which were previously marked by QC Inspector Jose Salazar. Mr. Gregson also explained that the completed fillet and PJP welds on the radial stiffeners, which were found to be visually acceptable per AWS D1.5 and contract requirements, were in process of 100% magnetic particle inspection by QC Inspector Jose Salazar. QA Inspector noted that the in-process visual and magnetic particle testing by OIW QC Inspectors appeared to be in compliance with AWS D1.5 and contract requirements.

Note: QA Inspector later spoke with QC Inspector Jose Salazar and Mr. Salazar explained that the following weld joints had previously been completed and 100% visual and magnetic particle testing had been performed and no rejectable indications were found: WJ #W1-43, 44, 47, 48, 51, 52, 55, 56, 59, 60, 63, 64, 67, 68, 71, 72, 75, 76, 79 and W1-80. QA Inspector noted that visual/magnetic particle testing, performed by Mr. Salazar, appeared to be in

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compliance with AWS D1.5 and contract requirements.

Hinge-K Pipe Beam Assembly 102A-3: 9/29/09

a111-3 Forging to a110-3 Base Plate

QA Inspector witnessed welder #H49, FCAW tack welding, in the vertical position, the following radial stiffeners that were removed, to accommodate the a111-3 base metal repairs (WRR #2244-28): (WJ #126, 127), f108 (WJ #138, 139), c107 (WJ #142, 143), e108 (WJ #146, 147) and d108 (WJ #148, 149).

QA Inspector noted that QC Inspector Jose Salazar was present and had previously recorded in-process welding parameters of 25.2 amps and 220 volts, with a pre-heat temperature of approximately 350 degrees Fahrenheit (177C). QA Inspector noted that the welding was being performed in accordance to the welding procedure specifications (WPS 3048 and WPS 3050). QA Inspector randomly verified in-process welding parameters of 25.2 volts and 220 amps, with a pre-heat temperature of approximately 350 degrees Fahrenheit (177C), which appears to be in compliance with AWS D1.5 and the applicable welding procedure specification.

Note: QA Inspector noted that Mr. Rick Hinkle had completed the FCAW tacking of the above mentioned weld joints, later in the shift and had initiated the FCAW tacking on the weld run-off tabs, for the radial stiffeners, as shown in picture below. QA Inspector noted that the run-off tabs were probably be completed by end of shift and this assembly 102A-3 would eventually be placed in position for the SAW root passes on the radial stiffeners.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)

Hinge-K Pipe Beam Fuse Assembly 120A-6: 9/29/09

a124-14 Half Fuse to a124-2 Half Fuse

QA Inspector noticed that the second ESW stainless steel overlay passes were in-process, on this fuse assembly 120A-6. QA Inspector witnessed welder #F17, Mr. Igor Frolov performing electro slag welding (ESW) on the second layer welding passes, (approximately 90% complete), in the flat position, utilizing Soudokay brand Soudotape 316L stainless steel consumable strip. QA Inspector noted the first layer passes had previously been completed utilizing the 309L consumable strip and the remaining second (in-process) & third layer passes would be completed utilizing Soudokay brand Soudotape 316L stainless steel consumable strip, per contract requirements. QA Inspector randomly noticed QC Inspector's Mike Gregson and Jose Salazar were present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that welding amps were recorded as 1200 amps/25.2 volts, travel speed at 269mm/min. and a pre-heat temperature recorded at 70 degrees Fahrenheit (21 C). QA Inspector verified in-process welding parameters of 1200 amps/25.2 volts and recorded pre-heat temperatures of approximately 70 degrees Fahrenheit (21 C). QA Inspector verified Mr. Igor Frolov was currently qualified for this welding process/position and noted that Mr. Igor Frolov appeared to be in compliance with the applicable approved welding procedure specification (WPS 7003). 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: 5 OIW production personnel and 2 QC Inspectors.

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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
