

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-010960**Date Inspected:** 04-Jan-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** M. Gregson, J. 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:

Hinge-K Pipe Beam Assembly 102A-3

a111-3 Forging to a110-3 Base Plate

The QA Inspector noted that OIW welder # O6, Mr. Tim O'Brian was continuing to blend the weld start/stops, removing weld spatter and grinding all areas, which were previously marked by OIW QC Inspectors. The QA Inspector noted that these areas were on the previously completed submerged arc welded (SAW), HPS 485W stiffeners, designated as weld joints #W1-01 thru W1-163. The QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that the visual clean-up that was being performed by Mr. O'Brian, was intermittently monitored and areas that were completed, were then visually re-inspected. See attached picture below.

Hinge-K Pipe Beam Assembly 102A-1

a111-1 Forging to a110-1 Base Plate

The QA Inspector witnessed welder #T23, Mr. John Tellone, performing the submerged arc welding (SAW) on the a110-3 Base plate to b106 HPS 485W stiffener. The QA Inspector noted that this weld joint was designated as a partial joint penetration (AWS D1.5 TC-P4-S), weld joint #W2-02 and Mr. Tellone was performing the SAW in the flat (1G) position. The QA Inspector noted that Mr. Tellone was currently performing the SAW root pass and

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noted that Mr. Tellone was utilizing OIW approved welding procedure specification (WPS 4020). The QA Inspector noted that QC Inspector Jose Salazar, was present and Mr. Salazar explained to the QA Inspector that the in-process welding parameters/pre-heat temperatures, were intermittently verified. Mr. Salazar explained that average welding parameters for the SAW root pass, was recorded at 560 amps/35 volts, with a pre-heat of approximately 350 degrees Fahrenheit (177 C). The QA Inspector randomly verified pre-heat of approximately 350 degrees Fahrenheit (177 C) and welding parameters to be in compliance with the WPS 4020. The QA Inspector noted that the SAW performed by Mr. Tellone, appeared to be in-compliance with AWS D1.5 and the applicable WPS 4020. See attached picture below.

The QA Inspector was notified by swing shift QC Inspector Gary Mundt that welder #H4, Mr. Phoung Huynh, will continue the submerged arc welding on the partial joint penetration (PJP) weld joints. QC Inspector Mundt explained that Mr. Huynh was currently setting up to perform the SAW and he will be present. The QA Inspector later witnessed Mr. Huynh performing the SAW cover passes, on the a109 post Tension Cap plate to b106 HPS 485W stiffener. The QA Inspector noted that this weld joint was designated as #W2-01 and Mr. Huynh was performing the SAW in the flat position. The QA Inspector noted that Mr. Huynh was utilizing welding procedure specification (WPS) 4020. The QA Inspector randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit (177 C). QC Inspector Mundt later explained that average welding parameters were recorded at 563 amps and 35 volts. The QA Inspector verified the welding parameters were in compliance with the applicable WPS 4020.

AG Machining (Boring, OR)

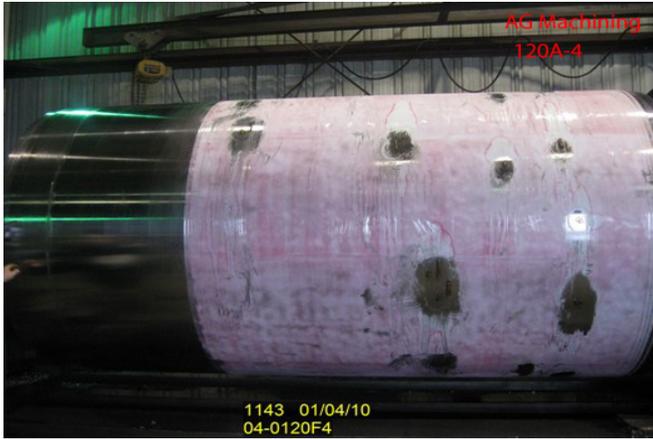
On this date, the QA Inspector arrived at AG Machining to witness the final machining on Fuse 120A-4. The QA Inspector met with the AG machinist and AG explained that the third and final cut pass was currently in-process. AG explained that this cut pass was set to remove the overlay material, to achieve a final outside diameter measurement of 1920.4mm. AG explained that during the initial final cut pass, that some minor inclusions were still present in the overlay. AG explained that the indications were shallow enough to machine out and chose to machine a deeper cut pass. The QA Inspector noted that the final fished outside diameter contract requirement is 1920mm (+/- 1mm). AG explained that this final cut pass should be complete on 1/6/09 and then the entire overlay surface will be honed with a "superfinisher". AG explained that the "superfinisher" will smooth the surface to a minimum .8um, per the contract requirements. The QA Inspector noted that after AG performs the honing, OIW will arrive at AG, to perform the FARO laser measurements and final visual/PT testing, on the Fuse. See attached pictures below.

Material, Equipment, and Labor Tracking (MELT)

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. The QA Inspector observed at AG Machine shop: 1 AG machinist and 1 AG supervisor. The QA Inspector noted that no work was performed at OIW Vancouver paint shop.

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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
