

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-010866**Date Inspected:** 24-Dec-2009**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-1: 12/24/09

a111-1 Forging to a110-1 Base Plate

The QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that welder #T23, Mr. John Tellone, was currently in-process of performing the submerged arc welding (SAW) on the a109 Post Tension Cap plate to a106 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 #W2-19 and Mr. Tellone was performing the SAW in the flat (1G) position. The QA Inspector noted that Mr. Tellone was currently performing the SAW cover passes and noted that OIW approved welding procedure specification (WPS 4020), was being utilized. 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 cover passes, was recorded at 563 amps/35 volts, with a pre-heat of approximately 350 degrees Fahrenheit (177 C). 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.

Hinge-K Pipe Beam Assembly 102A-4: 12/24/09

a111-4 Forging to a110-4 Base Plate

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The QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that OIW Lead Troy Smith and Welder #J6, Mr. Craig Jacobson, were in-process of torque tightening, the 12 each., 1 3/4", threaded rods. The QA Inspector noted that OIW had previously re-inserted the threaded rods, to eliminate the gaps between the a109 Post Tension Cap plate and HPS 485W stiffeners. Mr. Salazar then explained to the QA Inspector that that the torque value was currently at 1656 foot pounds. Mr. Salazar explained that OIW had utilized a 400 foot pound torque wrench, attached to a 4.6 multiplier and subtracted 10% for "torque loss", to achieve the 1656 foot pounds. Mr. Salazar explained to the QA Inspector that he had measured the gaps between the stiffeners and Cap plate with a feeler gauge and .031" (.79mm), was the largest recordable gap. Mr. Salazar explained to the QA Inspector that OIW is going to continue to torque to a value of 2185 foot pounds, to possibly have 100% contact between the stiffeners and Cap plate.

AG Machining (Boring, OR) 12/24/09

The QA Inspector spoke with the AG Machinist, on this date and AG explained that the second cut pass, for final machining, was currently in-process. AG explained that they were approximately half-way complete, with the second pass and approximately 25 slag inclusions were present, in the finished stainless steel overlay. AG explained to the QA Inspector that these inclusions will require weld repairs. AG explained that the repairs will be needed, because the depth exceeds the tolerance for the finished outside diameter of 1920mm (+/- 1mm). AG explained that they had notified OIW of the weld repairs and OIW explained that they will probably arrive on 12/29/09, to complete the repairs. AG explained to the QA Inspector that this second cut pass should be complete on 12/28/09 and will require a final finish cut of approximately .005" (.13mm) and honing, to complete the required surface finish. AG explained that the third cut pass and honing, will start after OIW has finished the weld repairs.

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: 2 OIW production personnel and 2 QC Inspectors. The QA Inspector noted that the following personell 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.

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
