

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-010740**Date Inspected:** 10-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-3: 12/10/09

a111-3 Forging to a110-3 Base Plate

The QA Inspector spoke with OIW QC Inspector Jose Salazar and Mr. Salazar explained that the non-critical weld repair (WRR #29) was currently in process. Mr. Salazar explained that welder # O6, Mr. Tim O'Brian was performing the FCAW on the a111-3 forging base metal gouges, located behind weld joints #W1-125 and W1-129. Mr. Salazar explained that the gouges were previously visually inspected, prior to the FCAW and that he had performed 100% magnetic particle testing (MT) and found no rejectable indications. The QA Inspector was informed by Mr. Salazar that welding procedure specification 3048 (WPS3048) was being utilized by Mr. O'Brian, for this repair. Mr. Salazar explained that the in-process welding parameters were previously recorded as 262 amps and 26.2 volts. Mr. Salazar explained that continuous pre heat was checked and verified to be approximately 350 degrees Fahrenheit (177 C). The QA Inspector verified pre-heat to be at approximately 350 degrees Fahrenheit. Mr. Salazar explained that the WRR #29, should be completed on this date, by end of this shift. Mr. Salazar explained that the swing shift will apply the post heat required for 2 hrs. at 230 C-315 C and preliminary MT will be performed, after cooling to ambient temperature.

The QA Inspector noted that the two gouges were previously found, by Mr. Salazar, during the final visual inspection and were measured to be approximately 5mm deep/18mm long (#1) and 5mm deep/10mm long (#2).

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# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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AG Machining (Boring, OR)

Hinge-K Pipe Beam Fuse Assembly 120A-1: 12/10/09

On this date, the QA Inspector arrived at AG Machine shop to observe OIW perform the FARO laser measurements, on the Fuse 120A-1. The QA Inspector arrived at approximately 1230 and met with OIW Machinist Matt Ackerson. Mr. Ackerson explained to the QA Inspector that he had previously arrived at AG and had completed the set up, on the FARO laser equipment. Mr. Ackerson explained to QA Inspector that the finished outside diameter and cylindricity (concentricity) of this fuse assembly 120A-1, will be measured. The QA Inspector witnessed Mr. Ackerson performing these measurements and QA Inspector noted that at approximately 1330, Mr. Ackerson was complete. Mr. Ackerson explained to the QA Inspector that the finished outside diameter was measured at 1920.6915mm and the cylindrical deviation was measured at .2497mm. Mr. Ackerson explained to the QA Inspector that these measurements were calculated, based upon a theoretical surface temperature of 68 degrees Fahrenheit (20 C) and that the actual temperature of the fuse assembly was measured at 40 degrees Fahrenheit (4 C). QA Inspector noted that the contract requires a finished outside diameter of 1920mm (+/- 1mm) and cylindricity (+/1 mm). QA Inspector noted that the above mentioned FARO measurements, on this Fuse 120A-1, appeared to be in compliance with the specified tolerances, per the contract requirements. Mr. Ackerson explained to the QA Inspector that a final FARO test report will be completed and a copy will be provided to QA Inspector. 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: 2 OIW production personnel and 2 QC Inspectors. The QA Inspector observed at AG Machine shop: 1 AG machinist, 1 AG supervisor and 1 OIW machinist. The QA Inspector noted that no work was performed at OIW Vancouver paint shop.



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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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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.

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<b>Inspected By:</b>	Vance,Sean	Quality Assurance Inspector
<b>Reviewed By:</b>	Adame,Joe	QA Reviewer

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