

**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-010791**Date Inspected:** 22-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: 12/22/09

a111-3 Forging to a110-3 Base Plate

The QA Inspector was notified by QC Inspector Jose Salazar that this assembly 102A-3, will remain idle, pending the submittal and approval of CWR's #2244-009 thru 014. The QA Inspector noted that the excavations were previously completed and 100% visual/magnetic particle testing had been previously performed by OIW QC Inspector Jose Salazar. The QA Inspector noted that no rejectable indications were found by Mr. Salazar and that OIW will start the flux core arc welding (FCAW) on the repairs, after submittal and approval of the CWR's. The QA Inspector noted that QC Inspector Jose Salazar had previously measured the excavation, designated as CWR #2244-010, to be approximately 30mm L x 17mm W x 11mm D. The QA Inspector noted that QC Inspector Jose Salazar had previously measured the excavation, designated as CWR #2244-009, to be approximately 75mm L x 13mm W x 9mm D. The QA Inspector verified the above measurements and performed 100% visual/magnetic particle testing on the excavations, designated as weld joints # W1-146 (CWR # 2244-009) and #W1-142/W1-143 (CWR #2244-010) and found no rejectable indications. The QA Inspector completed the applicable magnetic testing report (TL 6028), on this date.

Hinge-K Pipe Beam Assembly 102A-1: 12/22/09

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## 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 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 #W2-20 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 randomly verified pre-heat of approximately 350 degrees Fahrenheit (177 C) and welding parameters of 563 amps/35 volts. 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.

## AG Machining (Boring, OR) 12/22/09

The QA Inspector arrived at AG Machine shop, on this date, to witness the final machining of the Fuse 120A-4. The QA Inspector met with the AG Machinist and AG explained that the 1st cut pass, for final machining, was in-process. AG explained to the QA Inspector that the cutting depth was set to remove approximately 1/4" (6mm) of overlay material. The QA Inspector noted that AG was approximately two-thirds complete with this 1st pass. AG explained to the QA Inspector that this 1st pass should be complete by the a.m. on 12/23/09 and that the 2nd cut pass should also start on 12/23/09. The QA Inspector noted that the contract requires a final outside diameter finish of 1920mm (+/1mm) with a surface finish of .8 µm. See attached pictures below.

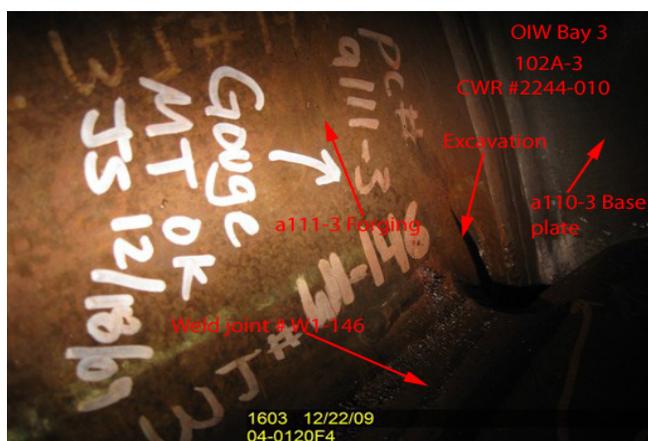
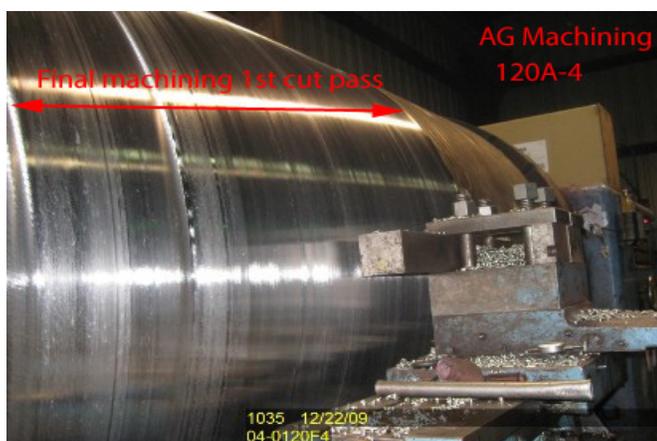
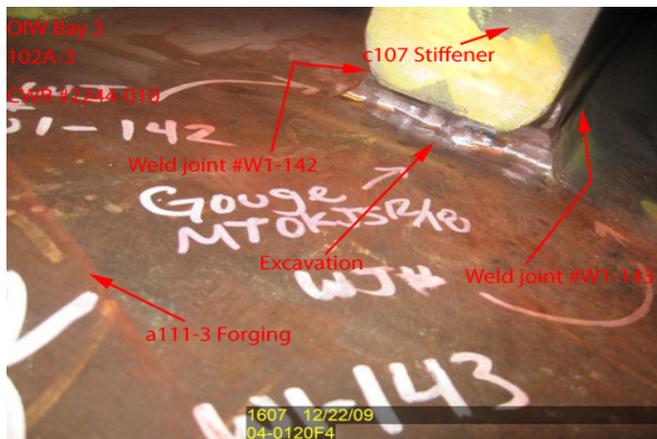
## Material, Equipment, and Labor Tracking (MELT)

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 the following personell at AG Machine shop: 1AG 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.

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