

**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-012145**Date Inspected:** 16-Feb-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR

<b>CWI Name:</b>	M. Gregson, J. Salazar, G. Mundt	<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>
<b>Inspected CWI report:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
		<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Bridge No:</b>	34-0006	<b>Component:</b>	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**

The QA Inspector was notified by OIW QC Inspector Jose Salazar that the final Magnetic Particle testing (MT) had been performed on the previously completed Critical Weld Repairs (CWR's 2244-016 and 2244-017). QC Inspector Salazar explained that linear indications were discovered during the final MT. QC Inspector Salazar explained that the indications appeared in separate areas, away from the weld repair areas. The QA Inspector performed 100% MT on the completed CWR's and verified the indications were present. The QA Inspector noted that the MT testing revealed 2 transverse indications on the weld joint #W1-142 and indications in the toe of the weld joint # W1-145. The QA Inspector measured the two transverse indications to be approximately 12 mm long each and the weld toe indication to be approximately 210 mm long. See attached pictures below.

The QA Inspector was present on this swing shift and noted that OIW QC Inspector Gary Mundt was present to monitor welding and production activities. The QA Inspector was later informed by QC Inspector Mundt that production was in process of performing the excavations on the above mentioned CWR's. The QA Inspector then met with QC Inspector Mundt and OIW welding supervisor Carl Johnston and it was explained that the two transverse indications (WJ #142) were excavated out by Troy Smith at the end of today's shift and swing shift was instructed to continue with the excavations. The QA Inspector explained that nothing has been submitted and no approval to perform the CWR's has been granted. QC Inspector Mundt then explained that the excavations will not

# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

continue on swing shift. The QA Inspector notified Lead QA Inspector Joe Adame of these activities and QA Inspector Adame explained that this will be addressed in the morning. The QA Inspector then measured and performed 100% MT on the in-process excavations and recorded the measurements as follows: WJ #142, approximately 60 mm L x 20 mm W x 15 mm D and WJ # 145 approximately 280 mm L x 20 mm W x 15 mm D. The QA Inspector noted that after MT was performed, linear indications were still present in WJ #145. The QA Inspector noted that no rejectable indications were present, at this time, in WJ #142. See attached pictures below.

## Hinge-K Pipe Beam Assembly 102A-2:

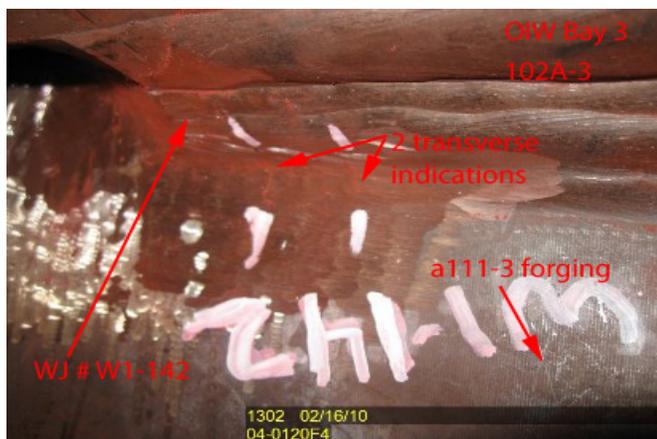
The QA Inspector witnessed an OIW production personell cutting and grinding the bevel prep on the a106/b106 and ab106 HPS 485W stiffeners. The QA Inspector noted that OIW is first cutting the bevel with an automated flame cutting torch set-up and then grinding with a mechanical grinder, to finish the bevel. The QA Inspector noted that the contract requires an AWS joint configuration designated as AWS D1.5 TC-P4. The QA Inspector noted that per this designation, a bevel prep angle of 60 degrees (+10/-5 degrees) and a root opening of 0 mm (+2/-0 mm), is required. The QA Inspector noted that this weld joint is being beveled in preparation for the a109 Post Tension Cap plate fit-up. See attached picture below.

## AG Machining (Boring, OR)

On this date, the QA Inspector arrived at AG Machine Works to witness the final machining on the Fuse 120A-3. Upon arrival, the QA Inspector met with AG Machinist, Stuart Doyle and Mr. Doyle explained that he was currently in process of the second and final machining cut pass. AG Machinist Doyle explained that this cut pass will is set to remove approximately .5 mm of stainless steel overlay material. AG Machinist Doyle explained that the final outside diameter will measure on the high end of the required tolerance. The QA Inspector noted that the contract requires a finished outside diameter of 1920 mm (+/- 1 mm). AG explained that final finish honing will be performed with a Superfinisher after this second cut pass is complete. AG Machinist Doyle explained that the honing will probably start on 2/17/10 and this will finish the surface to the contract requirements of a maximum .8 um. See attached picture 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 Works: 1 AG Machinist.



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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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