

**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-010084**Date Inspected:** 12-Nov-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Mike Gregson, Jose 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: 11/12/09

a111-3 Forging to a110-3 Base Plate

QA Inspector noticed that the partial joint penetration and fillet welds were previously completed, on the HPS 485W stiffeners and OIW production personell were in-process of performing weld clean-up, on the above mentioned stiffeners. QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that OIW welders # O6, Mr. Tim O'Brian and #T23, Mr. John Tellone were continuing to grind the weld start/stops, removing weld spatter and grinding all areas, which were previously marked by OIW QC Inspectors. Mr. Salazar also explained that the completed fillet and PJP welds on above mentioned stiffeners, which were found to be visually acceptable per AWS D1.5 and contract requirements, will then be 100% magnetic particle tested by qualified OIW QC Inspectors. QA Inspector noted that the in-process visual testing by OIW QC Inspector Jose Salazar, appeared to be in compliance with AWS D1.5 and contract requirements. See attached picture below.

AG Machining

Hinge-K Pipe Beam Fuse Assembly 120A-2: 11/12/09

a124-3 Half Fuse to a124-11 Half Fuse

QA inspector arrived at AG, on this date and spoke AG Machinist and AG explained that the additional machining

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cut pass, had been previously completed and approximately 30 visual indications were present on the outside, finished machined overlay surface. QA Inspector visually confirmed the indications were present and noted that the above mentioned indications appeared to be small, circular slag inclusions that were deposited during the electroslag overlay welding process performed by OIW. QA Inspector measured the depth of the indications to be approximately .25mm and lengths of approximately 2mm-10mm. QA Inspector measured the remaining overlay thickness to be approximately 8mm and noted that the above mentioned indications were present in the second layer of ESW 316L. AG explained that OIW Project Manager Bill Pender was previously notified of the results and Mr. Pender had instructed AG not continue with machining additional layers and OIW will pick up this fuse assembly 120A-2. AG explained that OIW will then perform the weld repairs and apply an additional layer of 316L, consumable strip overlay, at the Clackamas fabrication shop. See attached pictures below.

Note: AG explained that OIW Project Manager Bill Pender was previously notified, that the above mentioned indications were present, after final machining and Mr. Pender had instructed AG to machine approximately 1/8" (3.175mm) of additional material, as mentioned above, to possibly remove the visual indications, that were present after the third and final machining cut pass.

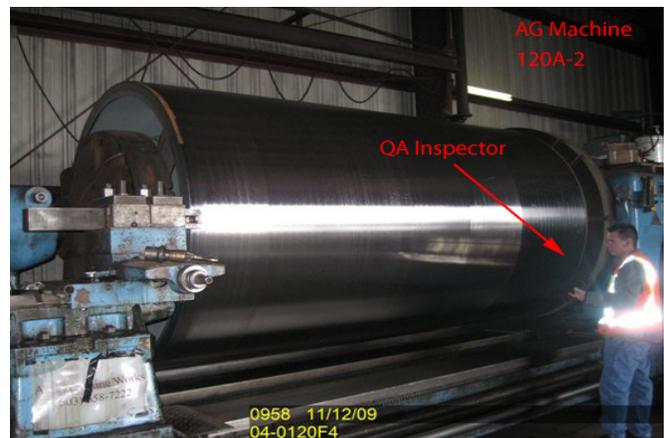
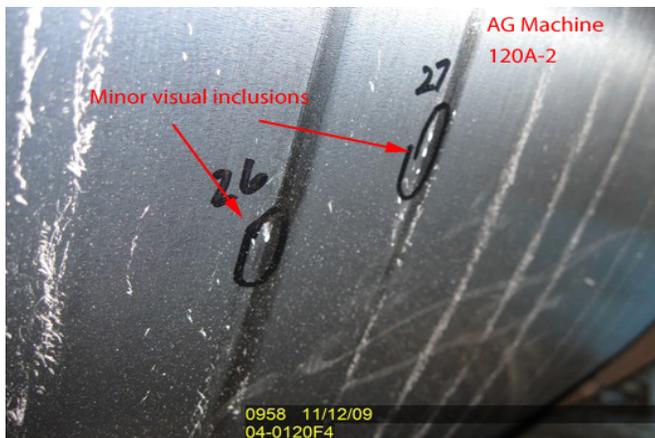
QA Inspector noted that contract requirements require a final outside diameter measurement of 1920mm (+/-1mm) and AG had previously machined to a final diameter of 1921mm. Because of the additional 1/8" (3.175mm) machining cut pass, the outside diameter measurement will be out of tolerance and OIW is required to apply an additional layer of 316L overlay, per contract requirements. Once the weld repairs and overlay pass is complete, OIW will then send back to AG, for additional machining, to meet the diameter requirements and final finish overlay surface of .8µm.

## Material, Equipment, and Labor Tracking

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.

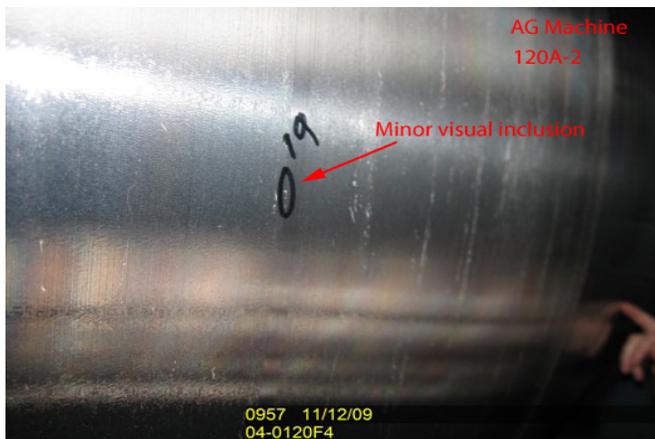
The QA Inspector noted that the following were present at AG Machine shop: 1 Machinist and 1 Supervisor.

The QA Inspector noted that the following were present OIW Vancouver paint shop: 1 Painter and 1 Supervisor.



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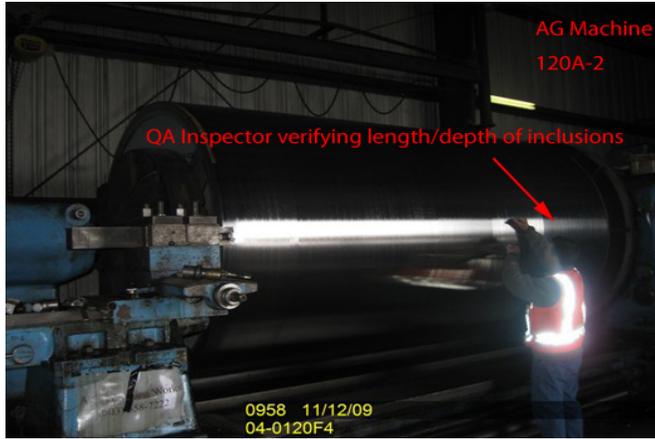
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## Summary of Conversations:

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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