

**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-012454**Date Inspected:** 03-Mar-2010**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:

OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Assembly 102A-2:

The QA Inspector witnessed WID #B62 (Marcus Belgarde), 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 (WJ) #W2-19 and WID #B62 was performing the SAW in the flat (1G) position. The QA Inspector noted that the SAW cover passes were currently in-process and noted that the OIW approved welding procedure specification (WPS 4020), was being utilized. The QA Inspector noted that QC Inspector Jose Salazar, was present and QC Inspector Salazar explained that the in-process welding parameters/pre-heat temperatures, were intermittently verified. QC Inspector Salazar explained that the average welding parameters for these SAW cover passes, were recorded at 600 amps/34.9 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 to be in compliance with the applicable WPS 4020. The QA Inspector noted that there were approximately 2 cover passes left to complete this WJ #W2-19. The QA Inspector was later informed by QC Inspector Salazar that the weld joint #W2-19 was complete and that WID #B62 was in-process of performing the SAW root passes, on weld joint #W2-20. QC Inspector Salazar explained that he was present during the SAW and the welding parameters and pre-heat temperatures were

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intermittently monitored. QC Inspector Salazar explained that the average welding parameters for the SAW root pass, were recorded at 470 amps/32 volts, with a pre-heat of approximately 350 degrees Fahrenheit (177 C). The QA Inspector noted that this WJ #W2-20 was designated, per the contract drawings, as piece mark a110-2 /a106 and the SAW appeared to be in compliance with AWS D1.5 and the applicable WPS. See attached picture below.

### Hinge-K Pipe Beam Assembly 102A-3:

The QA Inspector noted that OIW production personell had previously removed this assembly 120A-3 from the welding fixture and had placed the assembly in the machining fixture. The QA Inspector noted that OIW had placed the assembly in preparation for machining the completed HPS 485 W, mill-to-bear stiffeners. The QA Inspector noted that OIW did not start machining on the stiffeners, on this date. 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-7. The QA Inspector met with the AG Machinist and AG explained that the second cut pass was currently in-process and was approximately 25% complete. AG explained that approximately 15 visual indications were present in the machined overlay surface that will require weld repairs. AG Explained that due to the depth of the indications, up to 3mm, the indications will not completely machine out and the repairs will be needed. AG explained that OIW will be arriving on 3/4/10 to assess the repairs and possibly perform these on 3/5/10. 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: 3 OIW Production, 1 QC Inspector and 1 Supervisor.

The QA Inspector observed at AG Machine Works: 1 AG Machinist and 1 AG Supervisor.



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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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