**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Pursell, Gary
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-012250
**Date Inspected:** 23-Feb-2010

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** Oregon Iron Works Clackamas, Or.

**OSM Arrival Time:** 1000
**OSM Departure Time:** 1830
**Location:** Clackamas, OR

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|---|---|---|---|---|---|---|---|
| **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:**

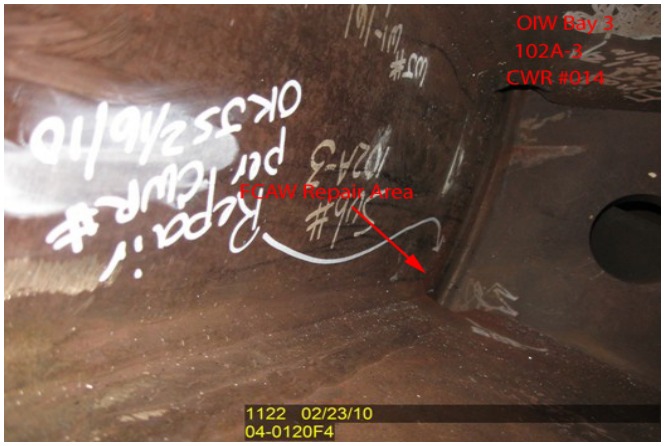
The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

Hinge-K Pipe Beam Assembly 102A-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 #W2-19 and WID #B62 was performing the SAW in the flat (1G) position. The QA Inspector noted that the SAW root pass was 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 average welding parameters for the SAW root pass, was recorded at 461 amps/29.3 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 the SAW appeared to be in-compliance with AWS D1.5 and the applicable WPS 4020. The QA Inspector was later informed by QC Inspector Salazar that the root pass was still in-process and WID #B62 was currently grinding the root in areas to clean, sound metal.

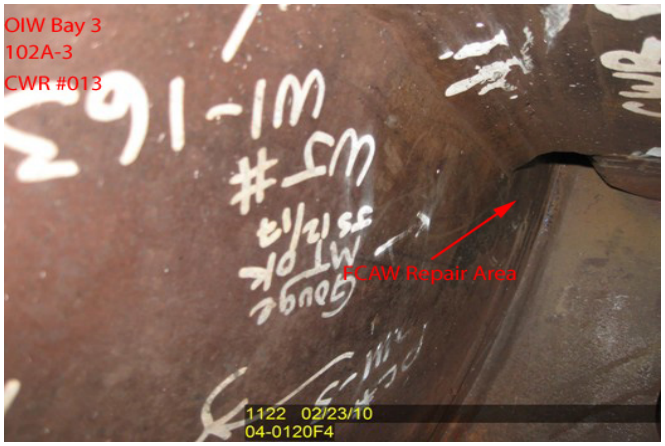
Hinge-K Pipe Beam Assembly 102A-3:

The QA Inspector was informed by OIW QC Inspector Jose Salazar that the Visual (VT) and Magnetic Particle testing (MT) was previously completed on the Critical Weld Repairs (CWR's) #2244-010, #2244-012, #2244-013, #2244-014, #2244-015, #2244-018, #2244-019 and #2244-021. QC Inspector Salazar explained that the VT/MT was completed on 2/16/10 and no rejectable indications were found. QC Inspector Salazar explained that the VT/MT was performed in accordance to AWS D1.5 and the OIW approved MT procedure QC-113, Rev. #3. The QA Inspector noted that the mentioned CWR's were previously submitted and State approved for repairs of the linear indications, discovered during final magnetic particle testing (MT), in the forging base metal and weld terminations. The QA Inspector reviewed the applicable CWR Reports and noted that the piece marks and weld joint numbers are as follows: CWR #010 ( c/107/a111 WJ #142/143), CWR #012 (b108/a111 WJ #161), CWR #013 (c107/a111 WJ #163), CWR #014 (c107/a111 WJ #162), CWR #015 (d108/a111 WJ #129), CWR #018 (b108/a111 WJ #140), CWR #019 (e107/a111 WJ #130) and CWR #021 (c107/a111 WJ #162). The QA Inspector performed 100% Visual and magnetic particle testing on the above mentioned CWR's and found no rejectable indications. The QA Inspector then notified OIW Lead QC Inspector Mike Gregson of the testing results and completed an applicable Magnetic Testing Report (TL 6028), on this date. 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.





# WELDING INSPECTION REPORT

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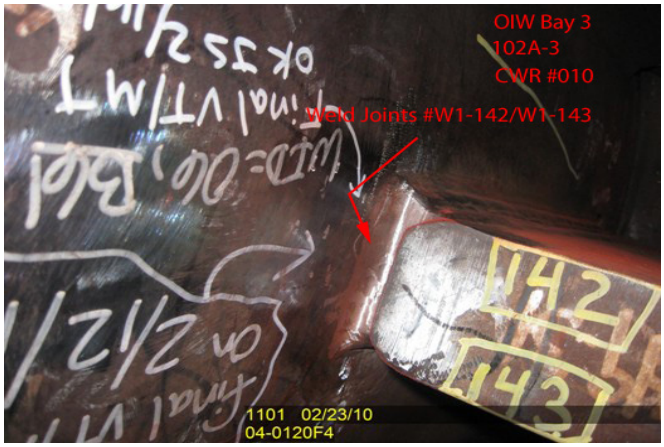



**Summary of Conversations:**

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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| **Inspected By:** | Vance,Sean | Quality Assurance Inspector |
| **Reviewed By:** | Adame,Joe | QA Reviewer |