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-010829
Date Inspected: 23-Dec-2009

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

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:

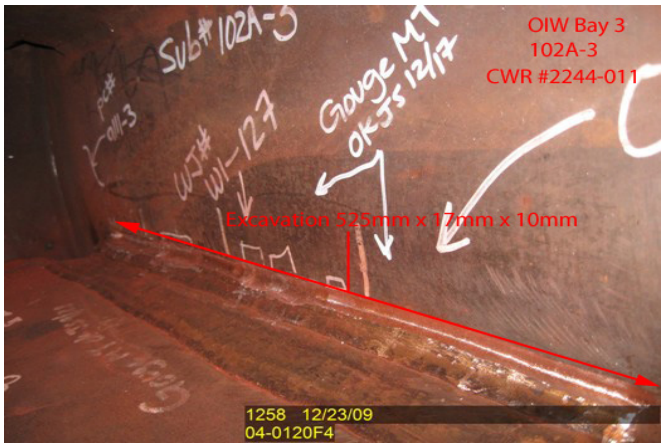
The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed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

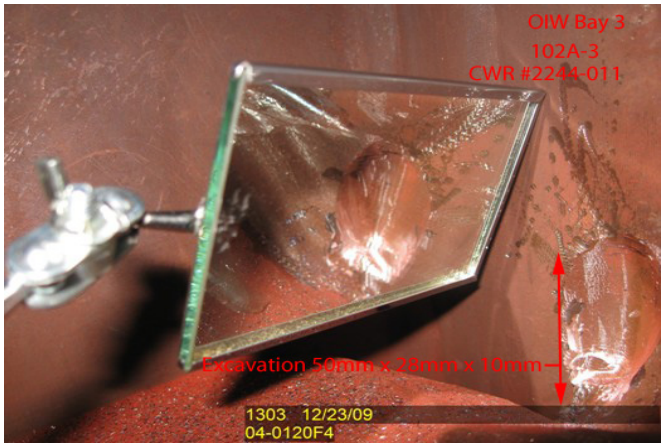
Hinge-K Pipe Beam Assembly 102A-3: 12/23/09
a111-3 Forging to a110-3 Base Plate
The QA Inspector was previously notified by QC Inspector Jose Salazar that this assembly 102A-3, will remain idle, pending the submittal and approval of the critical weld repairs (CWR's) #2244-009 thru 014. The QA Inspector noted that the excavations were previously completed on the CWR's and 100% visual/magnetic particle testing had been previously performed, by OIW QC Inspector Jose Salazar. The QA Inspector noted that the excavation was complete on the non-critical weld repair (WRR #3244-32) 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, on the above mentioned excavations 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 excavations and recorded the measurements as follows: CWR #2244-01, approximately 525mm L x 17mm W x 10mm D (excavation #1) and 50mm L x 28mm W x 10mm D (excavation #2). CWR #2244-012, approximately 50mm L x 25mm W x 6mm D. CWR #2244-013, approximately 55mm L x 25mm W x 6mm D. CWR #2244-014, approximately 25mm L x 13mm W x 10mm D. The QA Inspector noted that QC Inspector Jose Salazar had previously measured the excavation, designated as WRR #2244-32, to be approximately 40mm L x 14mm W x 6mm D. The QA Inspector verified the above

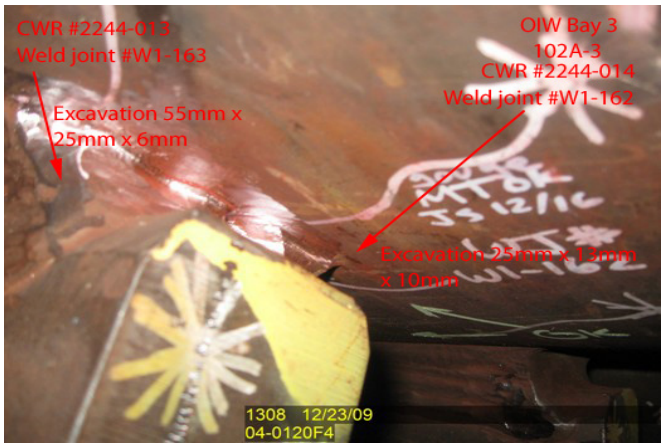
measurements and performed 100% visual/magnetic particle testing on the excavations, designated as weld joints # W1-127 (CWR # 2244-011), #W1-161 (CWR #2244-012) # W1-163 (CWR # 2244-013), # W1-162 (CWR # 2244-014) and #W1-125 (WRR#2244-32). The QA Inspector found no rejectable indications and completed the applicable magnetic testing report (TL 6028), on this date. See attached pictures below.

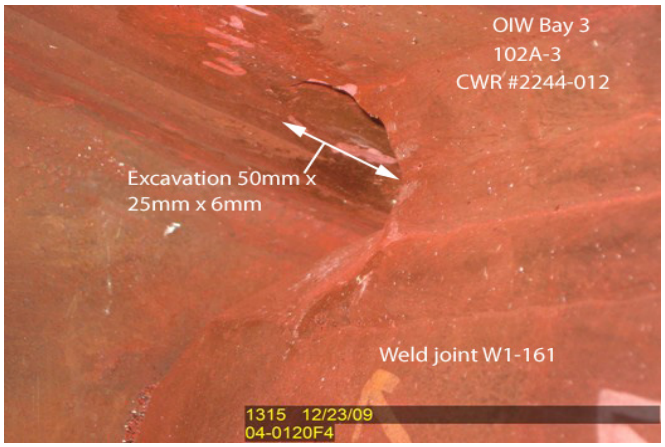
Hinge-K Pipe Beam Assembly 102A-1: 12/23/09
a111-1 Forging to a110-1 Base Plate
The QA Inspector witnessed welder #T23, Mr. John Tellone, performing the submerged arc welding (SAW) on the a110-3 Base plate to a106 HPS 485W stiffener. The QA Inspector noted that this weld joint was designated as a partial 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.

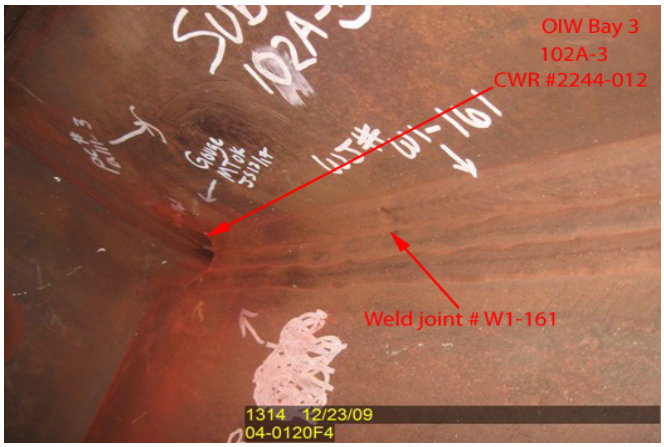
Material, Equipment, and Labor Tracking (MELT)
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.
The QA Inspector observed at Oregon Iron Works: 2 OIW production personnel and 2 QC Inspectors.
The QA Inspector noted that the following personell at AG Machine shop: 1AG machinist and 1 AG supervisor.
The QA Inspector noted that no work was performed at OIW Vancouver paint shop.











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.

WELDING INSPECTION REPORT

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