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-009686
Date Inspected: 13-Oct-2009

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

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Bill Buck			**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-3: 10/13/09
a111-3 Forging to a110-3 Base Plate
QA Inspector noticed this assembly 102A-3 had been previously placed in position and welder #O6, Mr. Tim O'Brian, was in process of performing submerged arc welding, on the d107 stiffener plate to a111-3 tubular forging, designated as weld joint # W1-155, in the flat position. QA Inspector noted that this weld joint was designated as a partial joint penetration (AWS D1.5 TC-P5-S) and QA Inspector verified Mr. O'Brian was currently qualified for this process/position. QA Inspector noted that Mr. O'Brian was utilizing OIW approved welding procedure specification (WPS 4016) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit (177 C). QA Inspector noticed QC Inspector Bill Buck was present to monitor in-process welding parameters (amps/volts) and noted that Mr. Buck had previously recorded in-process welding parameters of 565 amps and 35 volts, on the in-process cover passes. QA Inspector verified in-process welding parameters of 560 amps and 35 volts, which appears to be in compliance with the applicable welding procedure specification and contract requirements.
QA Inspector noticed that welder #J6, Mr. Craig Jacobson, was in process of performing submerged arc welding, on the b107 stiffener plate to a111-3 tubular forging, designated as weld joint # W1-132, in the flat position. QA

Inspector noted that this weld joint was designated as a partial joint penetration (AWS D1.5 TC-P5-S) weld and QA Inspector verified Mr. Jacobson was currently qualified for this process/position. QA Inspector noted that Mr. Jacobson was utilizing OIW approved welding procedure specification (WPS 4016) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit (177 C). QA Inspector noticed QC Inspector Bill Buck was present to monitor in-process welding parameters (amps/volts) and noted that Mr. Buck had previously recorded in-process welding parameters of 420 amps and 30 volts, on the in-process root pass. QA Inspector verified in-process welding parameters of 420 amps and 30 volts, which appears to be in compliance with the applicable welding procedure specification and contract requirements. See attached picture below.
Note: QA Inspector that the following weld joints, on the radial stiffeners, were completed by Mr. O'Brian and Mr. Jacobson, by end of shift: WJ #W1-132, W1-130, W1-134, W1-155 and W1-153. QA Inspector noted that 100% magnetic particle testing was performed on the above mentioned FCAW root passes, by Mr. Buck and no rejectable indications were found, per AWS D1.5 and contract requirements.

OIW Laydown Yard:
Hinge-K Pipe Beam Fuse Assembly 120A-4 and 120A-5: 10/13/09
a124-2 Half Fuse to a124-14 Half Fuse and a124-13 Half Fuse to a124-4 Half Fuse
QA Inspector noted that welder #F17, Mr. Igor Frolov, was currently in-process, of performing the weld clean-up and grinding, on the previously marked interior of fuse assemblies 120A-4 and 120A-5. QA Inspector noted that QC Inspector Jose Salazar had previously marked up the above mentioned fuse assemblies, for additional weld clean-up, on the interior base metal/ring stiffeners, prior to transfer to OIW Vancouver painting facility, to meet the criteria of AWS D1.5 and contract requirements. Mr. Salazar had previously explained to QA Inspector that the interior areas that were marked up, included weld blending, excessive weld spatter, sharp edges and various minor base metal gauges, to be blended and transitioned on the fuse assembly base material and interior stiffener rings. See attached pictures below.
Note:QA Inspector was later notified by Mr.Frolov that the weld-clean up on the previously marked areas on these fuse assembly 120A-4/120A-5, was complete. QA Inspector verified that the previously marked up areas by Mr. Salazar had been completed and noted additional interior weld spatter, to be removed. QA Inspector informed Mr. Frolov of the additional weld spatter that needed to be removed and QA Inspector witnessed Mr. Frolov performing this.
QA Inspector noted that the above mentioned fuse assemblies, would be transferred to OIW Vancouver, WA. painting facility and the interior blasted at a later date and QA Inspector will then perform an after blast visual inspection, per AWS D1.5 and contract requirements, prior to OIW applying inorganic zinc primer coat. See attached pictures below.

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: 5 OIW production personnel and 2 QC Inspectors.

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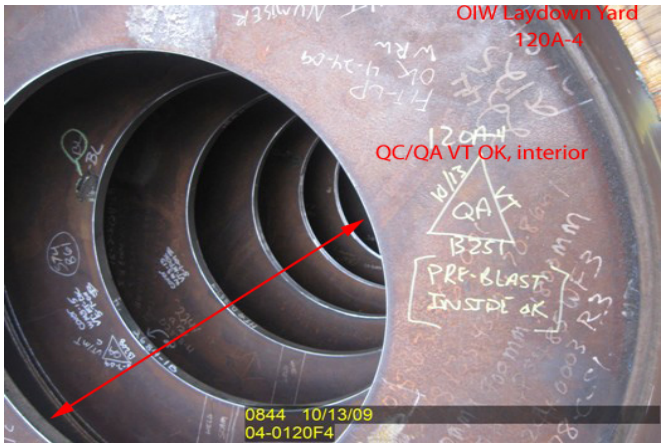

Summary of Conversations:

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.

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