

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-014475**Date Inspected:** 21-May-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, G. Mundt	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 101A-4:

The QA Inspector observed WID # S53 (Jerry Shepherd), performing backgouging on the weld joint, designated as # W4-01. The QA Inspector noted that this weld joint was the 120A-4 Fuse to 102A-4 Forging and was designated as an AWS D1.5 B-U7-S, Complete Joint Penetration (CJP). The QA Inspector observed Mr. Shepherd was performing the backgouge in the vertical position, utilizing the Carbon Arc process and that pre-heat was intermittently applied, utilizing a previously set-up stationary torch or rosebud. The QA Inspector observed that the backgouge was being performed on the non-critical weld repair, which was previously repaired utilizing the incorrect filler metal, E8X electrode instead of the required E9X electrode. The QA Inspector observed that Mr. Shepherd was currently performing this backgouge on "indication # 2", as recorded on OIW's Ultrasonic Examination Report (# 2244-10-UT-04) and that Mr. Shepherd was performing this from the interior of the weld joint. The QA Inspector observed that QC Inspector Jose Salazar was present and QC Inspector Salazar explained that the pre-heat was verified, prior to starting the Carbon Arcing on this non-critical weld repair. The QA Inspector noted that 150 degrees Fahrenheit is required, prior to backgouging.

The QA Inspector later observed that QC Inspector Salazar was in process of performing the Visual and Magnetic Particle (VT/MT), on the above mentioned excavation, identified as weld repair # 2 and QC Inspector Salazar explained that he had found no rejectable indications. The QA Inspector observed QC Inspector Salazar measuring

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the excavated area, utilizing 2 stainless steel pocket rulers. QC Inspector Salazar explained that he had recorded the following measurements on the excavation: 260 mm Long x 25 mm Wide x 45 mm Deep.

The QA Inspector then verified the measurements and performed 100 % Magnetic Particle Testing on the excavation. The QA Inspector found no rejectable indications during the testing and completed an applicable Magnetic Particle Testing report (TL 6028), on this date.

QC Inspector Salazar explained that the Flux Core Arc welding (FCAW) will probably start on swing shift and OIW approved Welding Procedure Specification (WPS) 3048 will be utilized, for the repair. The QA Inspector noted that the above mentioned, in process backgouging on the non-critical repair, appears to be in compliance with the applicable WRR and AWS D1.5.

The QA Inspector was present on this swing shift and observed WID # V7 (Vinny Vue) performing Flux Core Arc Welding (FCAW) on the above mentioned non-critical weld repair. The QA Inspector observed Mr. Vue was utilizing the applicable Welding Procedure (WPS) 3048 and was performing the FCAW in the vertical position. The QA Inspector observed that OIW QC Inspector Gary Mundt was present on this swing shift. QC Inspector Mundt explained to the QA Inspector that he had recorded in process welding parameters of 240 amps, 24 volts and a travel speed of 8 inches per minute. QC Inspector Mundt explained that the pre-heat was intermittently checked and was recorded at approximately 400 degrees Fahrenheit. The QA Inspector randomly verified the welding parameters and pre heat temperatures to be in compliance with the applicable WPS. QC Inspector Mundt explained that the FCAW on the repair will continue throughout the shift until complete and then post heat will be applied to the repair area. The QA Inspector noted that 2 hours minimum time on the post heat is required, per the WPS. QC Inspector Mundt explained that he will be present during the pre-heating and will intermittently verify the temperature during the post heat.

The QA Inspector then completed an applicable Magnetic Testing report (TL 6028), on this date. See attached pictures below.

Hinge-K Pipe Beam Assembly 102A-3:

The QA Inspector observed WID # B62 (Marcus Belgarde) attaching two rigging slings to the assembly. The QA Inspector observed that the slings were being attached to two shackles, which were attached to two previously placed carbon steel clamps. The QA Inspector observed that the clamps were placed around the a109 Post Tension Cap and Base plate and had been previously utilized to flip this and previous assemblies. The QA Inspector observed that after the slings were attached to the shackles, that Mr. Belgarde then utilized the hand held control to operate the overhead Bay 3 crane, with attached cables and a lifting hook. Once the crane lifting hook was positioned directly above the assembly, the QA Inspector observed the hook being lowered and then the two slings placed on the hook. The QA Inspector then observed Mr. Belgarde utilize the control to gradually lift the assembly from the floor. Once lifted from the floor, the QA Inspector observed the assembly being moved in the west direction and then being lowered to the shop floor. The QA Inspector then observed the assembly being laid flat on previously placed 4" x 4" wooded dunnage. Once placed flat on the floor, the QA Inspector observed Mr. Belgarde lower the crane hook and then detach from the slings. Once the hook was detached from the slings, the QA Inspector observed Mr. Belgarde raise the hook and leave the previously placed slings, shackles and clamps in place.

The QA Inspector later observed Mr. Belgarde cutting off the run-off tabs, which were previously utilized for the Submerged Arc Welding on the Partial Joint Penetration (PJP) weld joint # W2-19. The QA Inspector observed that Mr. Belgarde was utilizing an oxygen acetylene cutting torch to roughly cut off the tabs. Once the tabs were cut off, the QA Inspector observed Mr. Belgarde utilizing a hand held Makita brand grinder with an attached 9 " grinding disc. The QA Inspector observed that the excessive metal which was not removed by cutting was being

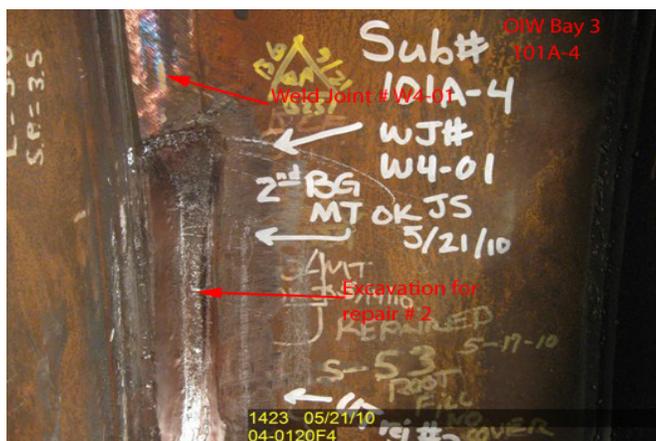
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removed by grinding. The QA Inspector observed that during the entire shift, Mr. Belgarde had performed the grinding on the above mentioned weld joint, which included the removal of excessive weld reinforcement on the cap, which exceed 3 mm. The QA Inspector observed that by end of shift, the assembly is still laying on the Bay 3 shop floor. 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: 4 OIW production personnel and 2 QC Inspectors.



Summary of Conversations:

Lead QA Inspector Joe Adame informed the QA Inspector that OIW had provided a copy of the final FARO testing report. QA Inspector Adame explained that OIW Machinist Steve Hatfield had performed the testing at OIW Vancouver. The QA Inspector reviewed the copy of the FARO testing report and per the testing report, the Fuse is not out of tolerance. Per the testing report, Cylindrical Deviation was measured at 1.936 mm.

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
