

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-014480**Date Inspected:** 26-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

<b>CWI Name:</b>	M. Gregson, J. Salazar, G. Mundt	<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>
<b>Inspected CWI report:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b> <b>No</b> <b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
		<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>

**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 a OIW production helper grinding on the Partial Joint Penetration (PJP) weld joints # W2-01, W2-02, W2-17, W2-18, W2-19, W2-20, W2-23 and W2-24. The QA Inspector observed that the helper was utilizing a hand held mechanical, Makita brand grinder with an attached 9" circular disc. The QA Inspector observed that the grinding was being performed from a parked scissor lift next to the weld joint and that the assembly was being slowly rotated as the grinding was being completed. The QA Inspector observed the helper randomly checking the areas which were ground with a bridge cam gauge. The QA Inspector noted that these weld joints were the a106/ab106 HPS 485 W stiffeners to a109/a110 Post Tension Cap and Base plate. The QA Inspector observed that OIW QC Inspectors had previously marked the weld joint during final visual inspection, for excessive reinforcement.

The QA Inspector also observed the helper performing grinding on the Post Tension and Base plate flame cut edges, which were previously marked by OIW Q Inspectors.

QC Inspector Mundt explained to the QA Inspector that the grinding will probably continue the entire shift and the weld joints and flame cut edges will eventually be visually inspected by QC. The QA Inspector noted that per AWS D1.5, a maximum of 3 mm weld reinforcement is acceptable.

---

---

# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

---

Hinge-K Pipe Beam Assembly 102A-3:

The QA Inspector observed WID # B62 (Marcus Belgarde) performing Submerged Arc Welding (SAW) on weld joint (# W2-24). The QA Inspector observed that WID # B62 was performing the SAW in the flat position and was currently qualified for this. The QA Inspector noted that this weld joint was a partial penetration, AWS D1.5 TC-P4-S, a109 Post Tension Cap plate to ab106 HPS 485 W stiffener. The QA Inspector observed that OIW QC Inspector Jose' Salazar was present at the time of welding and QC Inspector Salazar explained that he was intermittently checking the welding parameter amps, volts, travel speed and pre-heat temperatures. The QA Inspector randomly observed QC Inspector Salazar verify welding amperage of 588 amps, 32.4 volts and a travel speed of 20 inches per minute. The QA Inspector observed that the fill passes were currently in process and that the parameters were in compliance with the applicable Welding Procedure Specification (WPS) 4020. The QA Inspector then randomly performed a pre-heat check and noted that the temperature was approximately 350 degrees Fahrenheit.

The QA Inspector later observed that the SAW fill passes had been completed on the above mentioned weld joint # W2-24 and WID # B62 was in process of performing Submerged Arc Welding (SAW) on weld joint # W2-23. The QA Inspector observed that WID # B62 was performing the SAW in the flat position that this weld joint was a partial penetration, AWS D1.5 TC-P4-S, a110 Base plate to ab106 HPS 485 W stiffener. The QA Inspector observed that OIW QC Inspector Jose' Salazar was present at the time of welding and QC Inspector Salazar explained that he was intermittently checking the welding parameter amps, volts, travel speed and pre-heat temperatures. The QA Inspector randomly observed QC Inspector Salazar verify welding amperage of 468 amps, 31.7 volts and a travel speed of 16 inches per minute. The QA Inspector observed that the root passes were currently in process and that the parameters were in compliance with the applicable Welding Procedure Specification (WPS) 4020. The QA Inspector then randomly performed a pre-heat check and noted that the temperature was approximately 350 degrees Fahrenheit.

The QA Inspector was present on this swing shift and observed WID # B10 (Liem Bui) continuing to perform the Submerged Arc Welding fill passes, on the above mentioned weld joint, utilizing the identical WPS. The QA Inspector observed that OIW QC Inspector Jose' Salazar had performed Magnetic Particle testing on the root pass. The QA Inspector observed that QC Inspector Salazar had written on the part, "VT/MT ok root pass", next to the weld joint.

The QA Inspector observed that OIW QC Inspector Gary Mundt was present and QC Inspector Mundt explained that the welding parameters were recorded as follows: 620 amps, 35 volts and a travel speed of 22 inches per minute. QC Inspector Mundt explained that pre-heat was recorded at 350 degrees Fahrenheit and the QA Inspector randomly verified this. QC Inspector Mundt explained that the SAW will probably continue the entire shift and he will be present to intermittently monitor the welding activities. The QA Inspector randomly performed a pre heat check and noted that the temperature was approximately 350 degrees Fahrenheit. The QA Inspector noted that the above mentioned SAW appears to be in compliance with the applicable WPS.

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 Clackamas: 4 OIW production personnel and 2 QC Inspectors.

## 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

---

---

## WELDING INSPECTION REPORT

*( Continued Page 3 of 3 )*

---

---

remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

---

<b>Inspected By:</b>	Vance,Sean	Quality Assurance Inspector
----------------------	------------	-----------------------------

---

<b>Reviewed By:</b>	Adame,Joe	QA Reviewer
---------------------	-----------	-------------