

**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-006751**Date Inspected:** 18-May-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 2100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, Oregon**CWI Name:** Jon Nickolich, Mike Gregson**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:**

On this date, Caltrans Quality Assurance Inspector (QA) Sherri Brannon is present at the Oregon Iron Works, Inc. (OIW) jobsite in Clackamas, Oregon for the purpose of observing fabrication of the Hinge K Pipe Beams.

**OIW Fabrication Shop-Bay 3 (sub-assembly):**

QA Inspector Brannon randomly observed OIW qualified welder Mr. Liam Bui ID#B10 and one helper welding joining stiffener ring MK #a125 (HPS 485 W) to hinge K pipe beam half section MK#a124-9 (HPS 485 W). The fillet welds is identified as weld joint #WM3-08. Mr. Bui was observed welding in the 2F (horizontal) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Eni5-G-H2. QA Inspector Brannon observed the OIW QC CWI Inspector Mr. Jon Nickolich verifying that the pre-heat of 350 degrees F and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters measured/observed by QA are as follows: 575 amps, 32.5 volts and a travel speed of 457mm per minute appear to be in conformance with approved welding procedure specification WPS 4020 revision number 0.

**OIW Fabrication Shop-Bay 3 (sub-assembly):**

QA Inspector Brannon randomly observed OIW qualified welder Mr. Jayson Sinsel Heaton ID#S58 and one helper welding joining hinge K pipe beam gusset plates MK#a107 (HPS 485 W) to base plate MK#a110-4 (HPS 485 W) for hinge k pipe beam section 102A-4. The fillet weld is identified as weld joint #W2-14. Mr. Heaton was observed welding in the 2F (horizontal) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Eni5-G-H2. QA Inspector Brannon observed the OIW QC CWI Inspector Mr. Jon Nickolich verifying that the pre-heat of 350 degrees F and welding

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parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters measured/observed by QA are as follows: 503 amps, 32.9 volts and a travel speed of 483mm per minute appear to be in conformance with approved welding procedure specification WPS 4020 revision number 0. Weld joint W2-14 completed.

OIW Fabrication Shop-Bay 3 (sub-assembly):

QA Inspector Brannon observed OIW Foreman Mr. Mike Wright opening Lincoln Electric MIL800-HPNi moisture resistant containers and placing flux in an electrically heated and thermostatically controlled Keef oven made by Henkel Inc. for baking flux prior to using with the submerged arc welding process. Henkel Inc. model number KF-300, serial number 120402. QA observed that the Keef oven had been calibration on March 3, 2009 and is due again September 23 2009. QA inspector Brannon was informed by Mr. Wright that OIW is following manufacturer recommendations for baking the flux. Mr. Wright also stated that the flux will bake for approximately 2 hours at 400°F.

OIW Fabrication Shop-Bay 3 (sub-assembly):

QA Inspector Brannon observed no production activity on Hinge K Pipe Beam sub assemblies noted below for the duration of the shift.

Hinge-K Pipe Beam Sub Assembly, MK#102A-1 - MK#a111-1 forging to MK#a110-1 base plate idle.

Hinge-K Pipe Beam Sub Assembly, MK#102A-2 - MK#a111-2 forging to MK#a110-2 base plate idle.

Hinge-K Pipe Beam Sub Assembly, MK#102A-3 - MK#a111-3 forging to MK#a110-3 base plate idle.

Note: QA Inspector Brannon also, observed pending critical welding repair (CWR-2244-003) at Mk#102A-1 weld joint W2-13, MK#102A-2 weld joint W2-13 pending 1st time UT repair and MK#102A-3 weld joint W2-13 pending 1st time UT repair..

Hinge-K Pipe Beam Sub Assembly, MK#120A-5 – MK#a124-2 half fuse to MK#a124-14 half fuse idle.

Hinge-K Pipe Beam Sub Assembly, MK#120A-2 – MK#a124-3 half fuse to MK#a124-11 half fuse.

Note: Inspector Brannon also, observed pending 3rd time repair critical welding repairs (CWR-2244-005) at Mk#102A-2 weld joint WM3-18.

Caltrans Status and Production Tracking:

QA Inspector Brannon also updated Caltrans status and production tracking logs for tracking of check samples, procedure qualification record (PQR), critical weld repairs (CWR), non-critical welding repairs (WRR), completed and in process welding, QC/QA non-destructive testing.

Material, Equipment, and Labor Tracking:

QA Inspector Brannon performed a verification of personnel at OIW. QA Inspector Brannon observed 1 Supervisor, 2 Quality Control and 2 production personnel on this date.

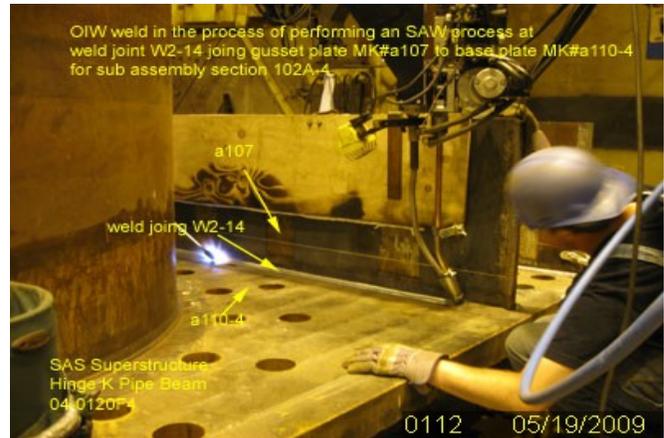
The following digital photograph below illustrates observation of the activities being performed.

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## Summary of Conversations:

As noted within this report.

## 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:** Brannon, Sherri

Quality Assurance Inspector

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**Reviewed By:** Adame, Joe

QA Reviewer