

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: 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-007680**Date Inspected:** 07-Jul-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2230**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR

<b>CWI Name:</b>	Steve Barnett		
<b>Inspected CWI report:</b>	Yes	No	N/A
<b>Electrode to specification:</b>	Yes	No	N/A
<b>Qualified Welders:</b>	Yes	No	N/A
<b>Approved Drawings:</b>	Yes	No	N/A

<b>CWI Present:</b>	Yes	No	
<b>Rod Oven in Use:</b>	Yes	No	N/A
<b>Weld Procedures Followed:</b>	Yes	No	N/A
<b>Verified Joint Fit-up:</b>	Yes	No	N/A
<b>Approved WPS:</b>	Yes	No	N/A
<b>Delayed / Cancelled:</b>	Yes	No	N/A

**Bridge No:** 34-0006**Component:** Hinge-K Components**Summary of Items Observed:**

Summary of Items Observed: On this date, Caltrans Quality Assurance Inspector (QA) Clete Henke was present at Oregon Iron Works, Inc. (OIW) in Clackamas, OR for observation of fabrication of the Hinge K Pipe Beams and related activities including in process welding and OIW Quality Control (QC) visual and nondestructive testing. The following observations were recorded:

OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Fuse Sub-Assembly 120A-8:

a125 stiffener ring to a124-8 Fuse

The QA Inspector intermittently monitored OIW welder Yuriy Bannikov (WID B61) during in progress Submerged Arc Welding (SAW) at non-critical base metal repair location identified in Weld Repair Report WRR-2244-25. The referenced location consisted of a pitted area resembling an arc strike on an a125 stiffener ring. Welder B61 was observed grinding out the affected area and surrounding base metal in an attempt to create a weldable profile. The QA Inspector observed as OIW QC Inspector Steve Barnett performed Magnetic particle Testing (MT) and Visual Inspection (VT) of the excavated area prior to initiation of SAW repair. Mr. Barnett stated that he had located no rejectable indications. Following Mr. Barnett, the QA Inspector performed 100% VT of the excavated area, finding it to be in general compliance with contract documents and approved repair procedure. Welder B61 proceeded to deposit SAW root, fill and cover passes in the flat (1G) position in accordance with approved welding procedure 4020 at the location referenced above. The QA Inspector noted the OIW welder was maintaining continuous preheat utilizing two torches. An OIW helper was observed assisting welder B61 during SAW process. The QA Inspector observed OIW QC Inspector Steve Barnett regularly monitoring and recording the in process SAW parameters. The QA Inspector also intermittently observed in

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process welding parameters and determined that the SAW parameters and minimum preheat/interpass temperature appeared to be in general compliance with the contract requirements. The repair appeared to be completed in general accordance with contract documents and approved WRR.

Hinge-K Pipe Beam Fuse Assembly 120A-2:

a124-3 to a124-11

The QA Inspector observed no production activity on the assembly noted above for the duration of the shift.

Hinge-K Pipe Beam Fuse Assembly 120A-5:

a124-14 to a124-2

The QA Inspector observed no production activity on the assembly noted above for the duration of the shift.

Hinge-K Pipe Beam Fuse Sub-Assembly 120A-6:

A124-9 to a124-1

The QA Inspector observed no production activity on the assembly noted above for the duration of the shift.

Hinge-K Pipe Beam Base Assembly 102A-1:

a111-1 forging to a110-4 base plate

The QA Inspector observed no production activity on the assembly noted above for the duration of the shift.

Hinge-K Pipe Beam Base Assembly 102A-4:

a111-4 forging to a110-4 base plate

The QA Inspector intermittently monitored OIW welder Bui Liem (WID B10) during in progress Submerged Arc Welding (SAW) at weld joints W1-95 & W1-117. The referenced connections join radial stiffeners b108 & f108 to a107 stiffener. The QA Inspector observed as OIW QC Inspector Steve Barnett performed Magnetic particle Testing (MT) and Visual Inspection (VT) of ground tack welds and subsequently the completed root pass at weld W1-117. This testing was performed for informational purposes at the behest of OIW quality control management.

Mr. Barnett stated that he had located no rejectable indications. The QA Inspector intermittently observed as welder B10 continued to deposit SAW fill and cover passes in the horizontal (2F) position in accordance with approved welding procedure. The QA Inspector noted the OIW welder was maintaining continuous preheat utilizing a torch. Both referenced connections were completed during the shift. The QA Inspector observed OIW QC Inspector Barnett regularly monitoring and recording the in process SAW parameters. The QA Inspector also intermittently observed in process welding parameters and determined that the SAW parameters and minimum preheat/interpass temperature appeared to be in general compliance with the contract requirements -- (W1-112: 35 volts, 585 amperes, 432mm/min travel speed ).

Hinge-K Pipe Beam Fuse Assembly 120A-3:

The QA Inspector observed no production activity on the assembly noted above for the duration of the shift.

OIW Fabrication Shop-Bay 6

Hinge-K Pipe Beam Fuse Assembly 120A-4:

a124-13 to a124-4

The QA Inspector intermittently observed OIW qualified welder Vincent Vu (WID V7) during in-process pick-up welding of Soudotape 316L stainless steel overlay to hinge k pipe beam fuse sub-assembly 120A-4. The weld

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joint is identified as 316L 3rd layer. Mr. Vu was observed grinding low spots on completed 316L 3rd layer and subsequently welding the excavated low spots in the flat position utilizing automatic electro slag welding (ESW) overlay process with a .5mm x 60mm Soudotape 316L stainless electrode, filler metal brand Soudotape class EQ316L automatic. Welder V7 was assisted by an OIW helper during ESW activity. The QA Inspector observed OIW QC Inspector Steve Barnett regularly monitoring and recording the in process ESW parameters. The QA Inspector also intermittently observed in process welding parameters and determined that the ESW parameters (1200 amps, 25 volts, 254mm/min travel speed) and minimum preheat temperature of 70° F appeared to be in general compliance with the contract requirements and approved OIW Welding Procedure Specification (WPS) 7003.

### Material, Equipment, and Labor Tracking:

The QA Inspector performed verification of personnel involved with this project and equipment in use. The QA Inspector accounted for 5 OIW production personnel and 1 Quality Control Inspector present on this date.



### Summary of Conversations:

As noted in the body of the 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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<b>Inspected By:</b>	Henke,Clete	Quality Assurance Inspector
<b>Reviewed By:</b>	Adame,Joe	QA Reviewer

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