

**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-011493**Date Inspected:** 13-Jan-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> |
| <b>Bridge No:</b>                  | 34-0006                          | <b>Component:</b>                | 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 6 (ESW Overlay Process)

Hinge-K Pipe Beam Fuse Assembly 120A-8

The QA Inspector witnessed welder WID #F17, Mr. Igor Frolov performing electro slag welding (ESW) on the first layer welding passes, in the flat position. The QA Inspector noted that the first layer was approximately 40% complete and the 309L stainless steel consumable strip, was being utilized. The QA Inspector randomly noticed QC Inspector Jose Salazar was present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QC Inspector Salazar explained to the QA Inspector that welding amperage was previously recorded at 1225 amps/25.2 volts, travel speed at 279mm/min. and a pre-heat temperature recorded at 225 degrees Fahrenheit (100 C). The QA Inspector verified the welding parameters and the minimum pre-heat temperatures were in compliance with the applicable WPS 7003. The QA Inspector verified Mr. Igor Frolov was currently qualified for this welding process and position. The QA Inspector noted that the ESW being performed appeared to be in compliance with WPS 7003.

The QA Inspector was present on this swing shift and witnessed WID#V7, Mr. Vincent Vue continuing to perform electro slag welding (ESW) on the 1st layer ESW welding passes, utilizing the 309L stainless steel consumable strip, in the flat position. The QA Inspector randomly noticed QC Inspector Gary Mundt was present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QC

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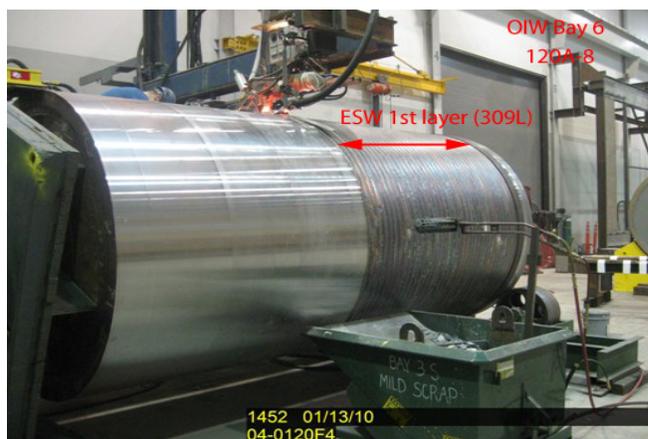
Inspector Mundt explained to the QA Inspector that welding amperage was previously recorded at 1275 amps/24.5 volts, travel speed of 279mm/min. and a pre-heat temperature recorded at 225 degrees Fahrenheit (100 C). The QA Inspector noted that the ESW being performed appeared to be in compliance with WPS 7003.

## AG Machining (Boring,OR)

On this date, the QA Inspector arrived at AG Machine to observe the final finishing, on this Fuse 120A-4. The QA Inspector met with the AG Machinist and AG explained that the final finish pass was currently in process. AG explained that OIW QC Inspector Jose Salazar had previously performed an informal surface finish check, utilizing a profilometer and had found areas on the finished overlay that exceeded the contract requirements. AG explained that these areas on the overlay were typically the areas where OIW had performed the weld repairs and had sanded, to blend with the surface. AG explained that OIW PM Bill Pender had instructed AG to perform this additional final honing pass on the entire Fuse. AG explained that they were utilizing a Superfinisher, to perform this and should be complete on this date, by the end of the shift. The QA Inspector noted that the contract requires a final surface finish of .8um. 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: 5 OIW production personnel and 2 QC Inspectors. The QA Inspector observed at AG Machine shop: 1 AG machinist and 1 AG supervisor. The QA Inspector noted that no work was performed at OIW Vancouver paint shop.



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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.

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| <b>Inspected By:</b> | Vance,Sean | Quality Assurance Inspector |
| <b>Reviewed By:</b>  | Adame,Joe  | QA Reviewer                 |

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