

**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-011855**Date Inspected:** 03-Feb-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**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:

**AG Machining (Boring, OR)**

On this date, the QA Inspectors Sean Vance and Joe Adame, arrived at AG Machine shop to observe OIW perform the final penetrant testing (PT) and surface finish testing, on the Fuse 120A-5. The QA Inspectors arrived at approximately 0900 and met with OIW QC Inspector Jose Salazar and an AG Machinist. The AG Machinist explained that he had previously arrived at approximately 0600 to apply heat to the Fuse 120A-5, utilizing 2 propane heaters, prior to the penetrant testing to be performed by QC Inspector Salazar. QC Inspector Salazar explained to the QA Inspectors that he had previously arrived at AG at approximately 0800, to verify surface temperature of the Fuse, prior to the penetrant testing. QC Inspector Salazar explained to the QA Inspectors that the final PT testing will be done utilizing OIW's procedure QC-114, sect. 8.0, Water Washable Visible Die Penetrant. QC Inspector Salazar explained that he had brought a profilometer and that the final surface finish, will also be checked, after the final PT is completed. QA Inspectors witnessed Mr. Salazar cleaning the entire Fuse 120A-5 with acetone, to remove all surface irregularities, which would otherwise mask the indications of unacceptable indications. QA Inspectors witnessed Mr. Salazar performing pre-heat checks, utilizing a digital thermometer and noted that the surface temperature was approximately 75 degrees Fahrenheit (24 C). QA Inspectors witnessed Mr. Salazar then applying DP50 penetrant, utilizing a hand pump sprayer, to approximately one-half of the entire surface finish. QA Inspectors noted that the penetrant was applied evenly and Mr. Salazar

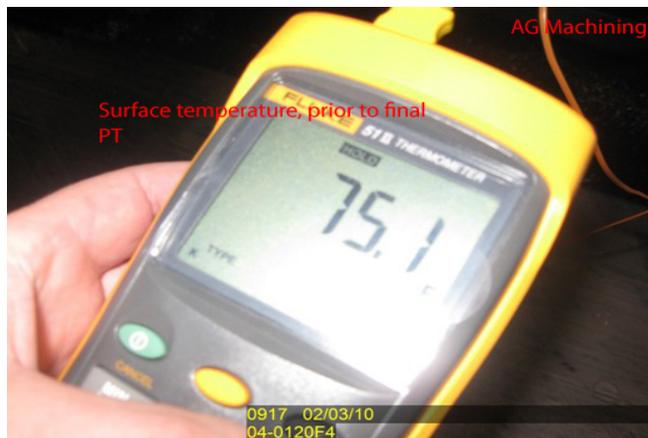
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explained that the DP 50 will sit for approximately 25-30 minutes (dwell time). QA Inspectors then verified the dwell time to be approximately 25 minutes and noted that Mr. Salazar had started to wipe the penetrant off with lint free rags. QA Inspectors then witnessed Mr. Salazar applying water, with a hand sprayer, to remove the excess DP50. QA Inspectors then witness Mr. Salazar applying D-100 spray can type developer, over the entire one-half surface, in a thin uniform coating. QA Inspectors noted that during the application of the D-100, that no relevant indications were present at the time. After approximately 20 minutes dwell time, QA Inspectors witnessed Mr. Salazar performing visual testing on the tested area. Mr. Salazar then explained to QA Inspectors that no relevant indications were present and was acceptable. QA Inspectors then witnessed Mr. Salazar cleaning off the applied developer with a water hose. The QA Inspector noted that Mr. Salazar performed the final PT testing, on the remaining one-half surface, in the same manner as mentioned above. Mr. Salazar explained to the QA Inspector that the remaining one-half was acceptable. QA Inspector noted that Mr. Salazar had performed 100% PT testing on this Fuse 120A-4 and found no rejectable indications. QA Inspector noted that Mr. Salazar appeared to be in compliance with AWS D1.5 visual acceptance criteria and QC-114. The QA Inspector then witnessed QC Inspector Salazar perform the final surface testing, utilizing a profilometer. The QA Inspectors verified that the profilometer had a calibration sticker and had been calibrated by OIW on 12/10/09, with a next due date of 12/10/10. QA Inspectors Sean Vance and Joe Adame then witnessed QC Inspector Salazar perform random testing on the surface finish and noted the surface profile readings averaged .5um. The QA Inspectors witnessed QC Inspector Salazar perform surface finish testing on the previously repaired and smoothed surfaces on the overlay. QA Inspectors noted that the contract requires a surface finish of .8um. QA Inspectors noted that this surface finish appears to be in compliance with the contract requirements. 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: 2 OIW production personnel and 2 QC Inspectors. The QA Inspector noted that the following personell were present at AG Machine shop: 1AG machinist, 1 AG supervisor and 1 OIW QC.



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## Summary of Conversations:

The QA Inspector was present on this Swing shift and spoke with Welding Supervisor Carl Johnston. Mr. Johnston explained that QC Inspector Gary Mundt had called in sick and would not be present to monitor welding activities performed. The QA Inspector explained to Mr. Johnston that per the contract requirements, that no welding is to be performed without QC present. The QA Inspector notified Lead QA Inspector Joe Adame that OIW will have no QC present, on the Swing shift. QA Inspector Adame spoke with QCM Tom Tomovick and Mr. Tomovick assured that no welding will be performed on the swing shift. QCM Tomovick explained that welding will resume on Graveyard shift and QC Inspector Jon Nickolich will be present.

## 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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