

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF Rte: 80 PM: 13.2/13.9File #: 1x.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000960**Date Inspected:** 27-Nov-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1600**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Benica, CA**CWI Name:** William Norris**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:** Procedure Qualification Record (PQR) test**Summary of Items Observed:**

Summary of Items Observed: The Quality Assurance (QA) Inspector arrived at the Ironworkers Apprenticeship Training Facility and met with Smith Emery Quality Control (QC) Inspector William Norris to observe QC functions during the welding of the Procedure Qualification Record (PQR) test plates listed below.

ABF-PQR-011-1-E.

1. The QA Inspector periodically observed American Bridge Floor (ABF) welding personnel Rick Clayborn assisted by Daniel Gordon performing the base material preheating prior to starting welding per the Flux Cored Arc Welding Self Shielded (FCAW-S) process to continue making Complete Joint Penetration (CJP) groove weld of the PQR test plate identified as ABF-PQR-011-1-E. The welding was being performed using Electrode Esab Coreshield 8, E71T-8, .072-inch diameter. The welding was being conducted using track guided "Bug-O-System self propel wire feeder" in the 3G (vertical) position.

a) Prior to the start of welding the QA Inspector observed QC Inspector William Norris verify the base material preheating temperature, the electrical welding parameters and travel speed to be approximately 116 degrees Celsius, 267 amperes, 21 volts and 100 millimeters/minute travel speed. QC Inspector notified the QA Inspector the welding of the test plate will be done using welding variables to produce the maximum calculated heat input.

b) During welding QA Inspector periodically observed the QC Inspector William Norris verifying and documenting the base material temperature, amperage, voltage and travel speed of each weld pass. The welding

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operation was completed on test plate on this date.

ABF-PQR-011-2-D.

2. Prior to the start of welding PQR test QC Inspector William Norris provided the QA Inspector with a copy of the Mill Test reports for both the base and backing material and the electrode manufactures certifications. The PQR weld joint is a standard butt joint (B-U2a-GF) intended to be a CJP groove weld. The QA Inspector performed a random visual verification of the fit up of the plates and observed the joint to be un accordance with figure 2.4 of the AWS D1.5, 2002

a) Prior to starting welding QA Inspector observed the QC Inspector William Norris verify the base material preheating temperature, electrical welding parameters and the travel speed to be approximately 108 degrees Celsius, 245 amperes, 19.9 volts and 80.8 millimeters/minute travel speed. QC Inspector notified the QA Inspector the welding of the test plate will be done using welding variables to produce the minimum calculated heat input.

b) QA Inspector periodically observed Rick Clayborn assisted by Daniel Gordon perform base material preheating prior to starting welding per the FCAW-S process to make CJP groove weld of the PQR test plate identified as ABF-PQR-011-2-D in the 3G (vertical) position. The welding was being performed using Electrode Esab Coreshield 8, E71T-8, .072-inch diameter. The welding was being conducted using track guided "Bug-O-System self propel wire feeder".

c) During welding QA Inspector observed Rick Clayborn performing air carbon arc cutting (gouging) to remove filler metal to open up groove to accommodate subsequent weld passes. Cutting was performed prior to apply the weld pass number 2, 3, 4 and 7 at full length of test plate. QC Inspector William Norris informed the QA Inspector that root area of test plate will be identified as zone 1 and the remaining will no be zone 2. The QA Inspector observed QC Inspector William Norris verifying and documenting the base material temperature, amperage, voltage and travel speed of each weld pass.

d) After welding was completed on both PQR test plates ABF-PQR-011-1-E and ABF-PQR-011-2-D, QC Inspector William Norris notified the QA Inspector the test plate weld profiles were visually acceptable. The QA Inspector observed the welding and visual verification appeared to be in general compliance with the figure 3.3 of the AWS D1.5-2002 and the project specifications. QC Inspector William Norries informed the QA Inspector that a final inspection will be conducted on the test plate welds on a later date after the welds were ground flush and the weld run off tabs were removed.

ABF-PQR-026-A.

3. Prior to starting welding PQR test plate the QA Inspector verified the weld joint to is a standard butt joint B-U2a-GF intended to be a CJP groove weld. The QA Inspector performed a random visual verification of the fit up of the plates and observed the joint to be un accordance with figure 2.4 of the AWS D1.5, 2002

a) QA Inspector periodically observed ABF welding personnel Rick Clayborn assisted by Daniel Gordon perform base material preheating prior to starting welding per the FCAW-S process to make CJP groove weld of the PQR

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test plate identified as ABF-PQR-026-A in the 3G (vertical) position using Electrode Hobart Fabshield XLR-8, E71T-8, 1.8 millimeter diameter. The welding was being conducted using track guided “Bug-O-System self propel wire feeder”.

b) Prior to starting welding QA Inspector observed the QC Inspector William Norris verify the base material preheating temperature and the electrical welding parameters to be approximately 122 degrees Celsius, 251 amperes, 21 volts and 120.3 millimeters/minute travel speed. QC Inspector William Norris notified the QA Inspector that the welding of the test plate will be done using the minimum calculated heat input.

The QA Inspector observed the welding performed at this location appeared to be in general compliance with the project plan and specifications. The welding was not completed on this test plate on this date.

Item Description	WBS	Dwg No.	Status
1			

### Summary of Conversations:

As noted in the body of the report above. QC Inspector William Norris informed the QA Inspector he intended to monitor and record the electrical welding parameters (amperage, voltage and travel speed) and document the placement of each welding pass in the groove joint.

### 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Medina,Ricardo	Quality Assurance Inspector
<b>Reviewed By:</b>	Mertz,Robert	QA Reviewer

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