

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-017702**Date Inspected:** 27-Oct-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See below**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:** SAS OBG**Summary of Items Observed:**

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as hole restoration 1E-pp11-3E-pp23.5-E2-LS-W (485 HPS), 2E-pp19.5-E5-LS-W (485 HPS), East and West SAS OBG lifting Lugs, 2E-pp15-E3-2/4 and the following observations were made:

3E-pp23.5-E2-LS-W (485 HPS)

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welder identified as Hua Qiang Hwang begin setting up to perform the SMAW root pass. Upon the arrival of the QA Inspector it was noted the above identified weld appeared to be approximately 50% complete. The QA Inspector noted the ceramic backing had been removed and the SMAW root pass from the second side had been started and some grinding performed. The QA Inspector randomly observed the minimum required preheat of 200°F appeared to have been maintained between the end of the shift the day before and the start of the shift on this am. The QA Inspector noted the weld was checked at 0700 and the minimum required preheat was maintained. After the minimum required preheat had been verified, the QA Inspector randomly observed the ABF welder continue the SMAW root pass. The QA Inspector noted the SE QC Inspector John Pagliero was on site to monitor and record the in process production welding at the above identified location. The QA Inspector randomly observed the SMAW parameters to be approximately 125 Amps with 1/8" E9018 low hydrogen electrodes. The QA Inspector randomly observed the in process welding parameters and dimensional tolerances appeared to be in general compliance with the approved welding procedure identified as ABF-WPS-D1.5-1012-3. The QA Inspector noted the ABF welder did not complete the SMAW on the QA Inspectors shift.

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2E-pp19.5-E5-LS-W (485 HPS)

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welder identified as Xiao Jian Wan begin setting up to perform the SMAW root pass. Upon the arrival of the QA Inspector it was noted the above identified weld appeared to be approximately 50% complete. The QA Inspector noted the ceramic backing had been removed and the SMAW root pass from the second side had been started and some grinding performed. The QA Inspector randomly observed the minimum required preheat of 200°F appeared to have been maintained between the end of the shift the day before and the start of the shift on this am. The QA Inspector noted the weld was checked at 0700 and the minimum required preheat was maintained. After the minimum required preheat had been verified, the QA Inspector randomly observed the ABF welder continue the SMAW root pass. After the minimum required preheat had been achieved, the QA Inspector randomly observed the ABF welder continue the SMAW root pass. The QA Inspector noted the SE QC Inspector John Pagliero was on site to monitor and record the in process production welding at the above identified location. The QA Inspector randomly observed the SMAW parameters to be approximately 122 Amps with 1/8" E9018 low hydrogen electrodes. The QA Inspector randomly observed the in process welding parameters and dimensional tolerances appeared to be in general compliance with the approved welding procedure identified as ABF-WPS-D1.5-1012-3. The QA Inspector noted the ABF welder did not complete the SMAW on the QA Inspectors shift.

East and West SAS OBG lifting Lugs

The Lead QA Inspector Rick Bettencourt and the QA Inspector Joselito Lizardo performed a visual survey of the lifting lugs previously installed in China. The QA Inspector Joselito Lizardo performed the visual testing of the West span and the Lead QA Inspector Rick Bettencourt performed visual testing of the East span of the SAS OBG's. It was previously discovered and noted that the lifting lugs identified as follows do not comply with the AWS D1.5 visual requirements section 3.6 and section 6.26:

East Span    West Span

- |                   |                   |
|-------------------|-------------------|
| 1.) 1E-pp8.5-E4-4 | 1.) 1W-pp8.5-E4-3 |
| 2.) 1E-pp8.5-E3-2 | 2.) 1W-pp8.5-E3-1 |
| 3.) 1E-pp9.5-E4-4 | 3.) 1W-pp9.5-E4-3 |
| 4.) 1E-pp9.5-E3-2 | 4.) 1W-pp9.5-E3-1 |

The QA Inspector identified above performed visual testing of all remaining lifting lugs in the East and the West spans of the SAS OBG's. After the inspection it was determined other than the lifting lugs identified above, the remainder of the lifting lugs inspected appeared to be in general compliance with AWS D1.5-02 visual requirements of section 3.6 and section 6.26.

2E-pp15-E3-4

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welder identified as Darcel Jackson continue performing the SMAW fill/cover passes started previously. The QA Inspector randomly observed the ABF welder preheat the area to approximately 100°F prior to performing any SMAW. After the minimum required preheat had been achieved, the QA Inspector randomly observed the ABF welder begin the SMAW fill pass. The QA Inspector noted the SE QC Inspector Mike Johnson was on site to monitor and record the in process production welding at the above identified location. The QA Inspector randomly observed the SMAW parameters to be approximately 130 Amps with 5/32" E7018 low hydrogen electrodes. The QA Inspector randomly observed the in process welding parameters and dimensional tolerances appeared to be in general compliance with the

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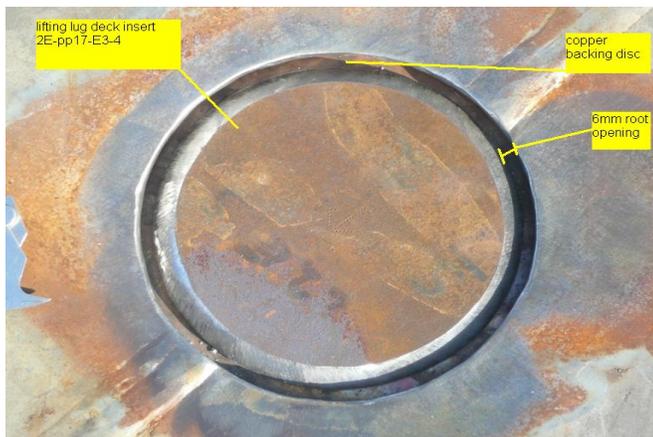
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approved welding procedure identified as ABF-WPS-D1.5-1070. The QA Inspector noted the ABF welder did not complete the SMAW on the QA Inspectors shift. The QA Inspector noted the weld reinforcement was not ground flush on this date.

2E-pp15-E3-2

The QA Inspector noted the above identified weld joint was completed previously. The QA Inspector noted the weld joint was not back gouged. The QA Inspector randomly observed the ABF welder complete the top side of the weld joint, remove the copper backing and clean the bottom side of the weld joint with a wire wheel (see summary of conversation). The QA Inspector randomly observed the weld joint was welded with a copper disc on the under side of the weld joint held back 2mm with 4 pieces of 2mm wire. The QA Inspector noted the ABF welder was utilizing a 6mm root opening with a shielded metal arc welding root/fill/cover pass. The QA Inspector randomly observed the ABF welder remove the copper backing and noted the copper disc appeared to be partially melted where the welding arc came into contact with the disc (see picture below). The QA Inspector randomly observed the above identified deck plate insert was ultrasonically tested and two rejects were located. The QA Inspector noted the above identified deck plate insert has not been turn over nor has it been accepted by the SE QC department currently.



## Summary of Conversations:

The QC Inspector John Pagliero informed the QA Inspector the welder was not going to back gouge the weld joint. The QC Inspector went on to inform the QA Inspector he could not accept the weld due to the fact it was not welded in conformance with ABF-WPS-D1.5-1070. The QA Inspector was later informed by the QC Inspector Mike Johnson the weld would be back gouged at a later date. Later in the shift, Mr. Pagliero was instructed by Mike Johnson no to speak with the QA Inspector Rick Bettencourt or provide any additional information. The QA Inspector noted Mr. Pagliero did in fact provide the QA Inspector with any information that was needed.

## 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>	Bettencourt,Rick	Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell,Bill	QA Reviewer
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