

**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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026952**Date Inspected:** 20-Dec-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**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**Summary of Items Observed:**

12E-pp111-E4-W2/W4

The Caltrans Quality Assurance (QA) Inspector Rick Bettencourt randomly observed the American Bridge/Fluor (ABF) welder George Lopez performing carbon arc gouging and back grinding of the above identified weld joints. It was noted prior to the arrival of the QA Inspector the top side of the weld joints had been completed and ground flush with the top deck plate. The QA inspector randomly observed the ABF welder grind the back gouged weld joints to bright metal. The QA Inspector randomly observed the back gouged weld joints and noted they appeared to be in general compliance with the contract requirements. The QA Inspector randomly observed the SE QC Inspector Salvador Moreno perform magnetic particle testing (MT) of the back gouged weld joint and noted no relevant indications were present at the time of the testing. The QA Inspector randomly observed the ABF welder continue welding the in process lifting lug hole restoration of #2 and #4. The QA Inspector noted the weld joint was approximately 50% complete at the time of the SMAW 4G back weld. The QA Inspector randomly observed the ABF welder continue the SMAW cover pass. The QA Inspector noted the ABF welder completed #2 and moved over to #4. The QA Inspector randomly observed the SMAW parameters were 1/8" E7018 low hydrogen electrodes with 115 Amps. The QA Inspector noted the parameters appeared to be in general compliance with ABF-WPS-1110A. The QA Inspector randomly observed the ABF welder did complete the above identified lifting lug holes on this date. The QA Inspector noted the weld reinforcement was ground flush on the QA Inspectors shift.

13E/14E-A2 (SPCM)

The QA Inspector randomly observed the above identified weld joint had been previously welded from the top side of the weld joint. The QA Inspector randomly observed the ABF welder James Zhen had unbolted the

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maximum amount of splice plates and removed the steel backing bar from the underside of the weld joint. It was observed the weld joint had been back gouged and MT had been performed with satisfactory results. The QA Inspector randomly observed the ABF welder James Zhen had previously started the induction heating blankets on the outside of OBG to ensure the minimum required preheat of 225°F was achieved prior to and maintained during welding. The QA Inspector randomly verified utilizing a 225°F temperature indicating marker and noted the minimum required preheat had been achieved. The QA Inspector observed the ABF welder to be utilizing the semi-automated flux cored arc welding (FCAW) for the above identified weld joint. The QA Inspector randomly observed the Smith Emery (SE) QC Inspector identified as Fred Vonhoff set the FCAW machine to the parameters of the approved WPS identified as ABF-WPS-D1.5-3110-4. The QA Inspector randomly observed the FCAW parameters were 280 Amps, 24.3 Volts and a travel speed of 185mm/min. The QA Inspector noted the ABF welder continued welding the FCAW fill/cover passes for the remainder of the shift. The QA Inspector noted the A2 segment of the above identified weld joint was completed on this date.

13E/14E-E1/E2

The QA Inspector randomly observed the ABF welder Wai Kit Lai had previously started the induction heating blankets on the outside of OBG to ensure the minimum required preheat of 150°F was achieved prior to and maintained during welding. The QA Inspector randomly verified utilizing a 150°F temperature indicating marker and noted the minimum required preheat had been achieved. The QA Inspector observed the ABF welder to be utilizing the semi-automated flux cored arc welding (FCAW) for the above identified weld joint. The QA Inspector randomly observed the SE QC Inspector identified as John Pagliero set the FCAW machine to the parameters of the approved WPS identified as ABF-WPS-D1.5-3042-A-1. The QA Inspector randomly observed the FCAW parameters were 265 Amps, 24 Volts and a travel speed of 400mm/min and a calculated heat input value of .95. The QA Inspector noted the ABF welder continued welding the FCAW fill/cover passes for the remainder of the shift. The QA Inspector noted both weld segments of the above identified weld joint was completed from the inside of the OBG on this date.

11E-pp100-E4-W1/W2

The QA Inspector was informed by the SE QC Inspector Salvador Moreno, the above identified lifting lug hole weld joints were ready for QA VT verification. The QA Inspector randomly observed the QC Inspector perform MT from the bottom side of both weld joints. The QA Inspector noted no relevant indications were located at the time of the testing. The QA Inspector performed a random visual inspection of the completed weld joints and noted they appeared to in general compliance with the contract requirements.

### **Summary of Conversations:**

The SE QC Inspector Bonifacio Daquinag informed the QA Inspector that an ABF welding representative excavated and welded an R2 repair in the 13W/14W A2 weld segment without prior engineering approval. The QC Inspector informed the QA Inspector, an internal non conformance report (NCR) would be written and submitted by the QC department. The QA Lead Inspector Danny Reyes informed the QA Inspector Rick Bettencourt that an incident report would be generated and submitted by Caltrans QA for the above identified incident.

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## 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 Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Bettencourt,Rick

Quality Assurance Inspector

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**Reviewed By:** Levell,Bill

QA Reviewer