

**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-026479**Date Inspected:** 07-Oct-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:** John Pagliero and Pat Swain**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 Tower**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base Electro Slag Welding (ESW) T- joint #E-041 location 'R' (face A), ABF welder Jorge Lopez was noted removing the remnants of the temporary strong back attachments. The welder was noted using carbon air arc gouging and followed by a disc grinder to completely remove the remnants. The welder was noted working from 9 to 13 meters elevation. At the end of the shift, carbon air arc gouging was still continuing and should remain Monday.

At Tower Base Elevation Electro Slag Welding (ESW) T- joint E-045 location 'F' (face A) and T-joint N-045 location 'E' (face A) 0 to 9 meters elevation, QA randomly ABF welder Fred Kaddu continuing to perform 3G SMAW cover welding repair due to excessive grinding on the visually noted overlap. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repair Rev. 2. The excavation was previously tested using Magnetic Particle Testing (MT) by ABF QC John Pagliero and randomly verified by this QA with positive result. The repair location and the adjacent base metal were preheated to more than 300°F using the propylene gas torch. During the shift, ABF QC John Pagliero was noted monitoring the welder. Measured welding parameter during welding was 130 amperes on a 1/8" diameter E7018H4R electrode. At the end of the shift, repair welding at elevation 0 to 9 meters elevation at ESW locations mentioned above was still continuing and should remain Monday.

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At OBG 8E-PP70.5-E5-NE access hole infill plate to top deck plate outside, QA randomly observed ABF/JV qualified welder Salvador Sandoval perform CJP groove fill pass welding. The welder was observed welding in the 1G (flat) position utilizing Shielded Metal Arc Welding (SMAW) with 5/32" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1010 Revision 1. The joint being welded has a double V-groove butt joint with open root welded from the bottom. ABF Quality Control (QC) Salvador Merino was noted monitoring the welding parameters of the welder. Measured welding parameter during welding was 190 amperes on a 5/32" diameter E7018H4R electrode. At the end of the shift, fill pass welding of the butt joint at location mentioned above was still continuing and should remain Monday.

At OBG 12E/13E top deck plate 'A1 to A3' (outside), QA randomly observed ABF certified welder James Zhen ID #6001 continuing to perform 1G (flat position) Submerged Arc Welding (SAW) welding fill pass on the splice butt joint. The welder was utilizing F7A6-EM12K-H8, 3.2mm electrode with corresponding Esab OK Flux 10.62 flux and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1. The joint being welded has a single V-groove butt joint with backing bar. The plates were preheated to more than 150 °F using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and moving it the side during welding. ABF/QC Pat Swain was noted monitoring the welding parameters of the welder during welding. QA noted the welding parameters of 570 amperes, 32.4 volts with travel speed of 380 mm per minute and calculated heat input of 2.91Kjoules per mm. The workmanship and appearance of the completed fill weld deemed satisfactory to the requirements of Seismic Performance Critical Members (SPCM). At the end of the shift, SAW fill pass welding was still continuing and should remain tomorrow.

At OBG 12E/13E top deck plate 'A3 to A5' (outside), QA randomly observed ABF certified welder Todd Jackson ID #4639 continuing to perform 1G (flat position) Submerged Arc Welding (SAW) welding fill pass on the splice butt joint. The welder was utilizing F7A6-EM12K-H8, 3.2mm electrode with corresponding Esab OK Flux 10.62 flux and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1. The joint being welded has a single V-groove butt joint with backing bar. The plates were preheated to more than 150 °F using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and moving it the side during welding. ABF/QC Pat Swain was noted monitoring the welding parameters of the welder during welding. QA noted the welding parameters of 550 amperes, 32.0 volts with travel speed of 380 mm per minute and calculated heat input of 2.78 Kjoules per mm. The workmanship and appearance of the completed fill weld deemed satisfactory to the requirements of Seismic Performance Critical Members (SPCM). At the end of the shift, SAW fill pass welding was still continuing and should remain tomorrow.

The QAI reviewed the observations and inspection with QA SPCM Lead Inspector, Daniel Reyes, written in this report. No issues were noted by the QAI and the QA SPCM Lead Inspector concurs with the QA report.

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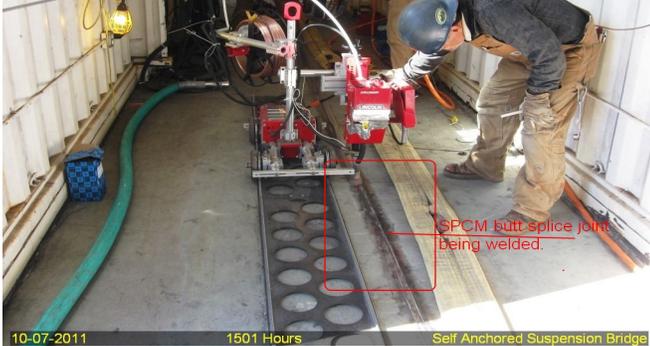
At OBG 12E/13E top deck plate A8 to A5 outside, ABF welder Todd Jackson was observed performing 1G Submerged Arc Welding (SAW) welding fill pass on Seismic Performance Critical Members (SPCM) splice butt joint.



At OBG 8E-PP70.5-E5 NorthEast deck access hole (outside), ABF welder Salvador Sarmol was observed performing 1G Shielded Metal Arc Welding (SMAW) welding fill pass on the radius of the butt joint.



At OBG 12E/13E top deck plate splice butt joint (outside), ABF welder James Zhao was observed performing 1G Submerged Arc Welding (SAW) welding fill pass on the Seismic Performance Critical Member (SPCM).



At Tower Base Electro Slag Welding (ESW) T-joint E-042 location "K" (face B), ABF QC John Pagliero was observed performing Magnetic Particle Testing (MT) on the complete removal of strong back.



## Summary of Conversations:

No significant conversation occurred today.

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

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

**Reviewed By:** Levell, Bill

QA Reviewer

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