

**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-019340**Date Inspected:** 13-Jan-2011**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:** Gary Ershan 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:** Orthotropic Box Girder**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 OBG 8W/9W side plate 'C1' inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding root pass then fill pass on the splice butt joint. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3042B-1. The joint being welded had a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. After welding the root pass, the welder was noted removing the fitting gear at the other side of the joint and pushed the heater blanket in direct contact with the plate being welded. The welder resumed welding fill pass after pushing the heater blanket and the plate preheat temperature was more than 150 degrees F.

At OBG 8W/9W top deck plate 'A' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai continuing to perform CJP repair welding. The welder was noted welding in 1G (Flat) position utilizing Shielded Metal Arc Welding (SMAW) with 5/32" and 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repairs. The welding repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC

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Pat Swain was noted monitoring the welder and his welding parameters. Welding parameter measured at the time of welding were 175 amperes and 135 Amperes respectively on the electrodes mentioned above which appears in compliance to the WPS. The locations of the repairs were noted below;

Location Y-dimension Length Width Depth Remarks

1. A3 5200mm 350mm 25mm 14mm Completed
2. A5 3420mm 130mm 26mm 21mm Completed
3. A1 840mm 620mm 26mm 20mm In progress

At OBG 1W-PP10.5-W2-N deck access hole to top deck plate outside, QA randomly observed ABF/JV qualified welder Jin Pei Wang perform CJP repair welding. The welder was noted welding in 1G (Flat) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repairs. The welding repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Gary Ersham was noted monitoring the welder and his welding parameters. Welding parameter measured at the time of welding was 135 Amperes which appears in compliance to the WPS. The locations of the repairs were noted below;

Location Y-dimension Length Width Depth Remarks

1. 370mm 450mm 27mm 17mm In progress
2. 70mm 300mm 25mm 15mm Excavated
3. 3240mm 270mm 25mm 14mm Excavated

The welder stopped welding in this location when the rain became persistent and the plywood cover he was using was already insufficient to protect the work.

At OBG 2W-PP15-W3- #2 & #4 inside - ABF welder Darcel Jackson was observed flush grinding the weld cover of the welded butt joints. After flush grinding, the welder has called ABF QC Mike Johnson and performed the VT and MT. QC has accepted the flush grinding of the butt joints and had asked verification from QA who concurred the VT/MT acceptance. The welder has moved to another access hole location 2W-PP17-W3 #1 & #3 and performed back gouging using carbon air arc gouging. After the carbon air arc gouging, the welder started grinding the groove of the back gouged area which was noted in progress until the end of the shift.

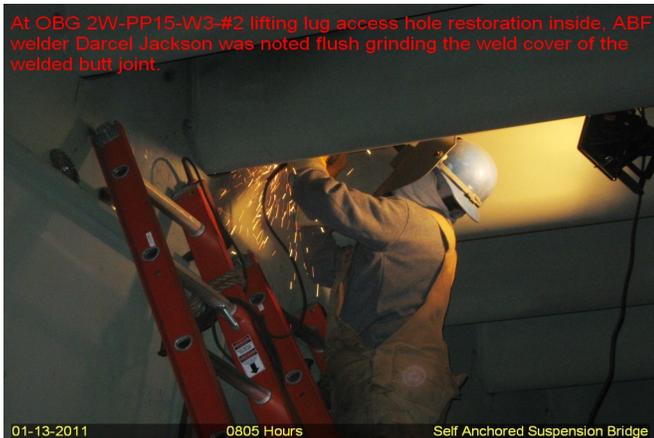
At OBG 2W-PP15-W4- #1 & #3 inside – ABF welder Mike Jimenez was noted back gouging the two butt joints using carbon air arc gouging. After the carbon air arc gouging, the welder started grinding the groove of the back gouged area which was noted in progress until the end of the shift.

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## 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

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**Reviewed By:** Levell, Bill

QA Reviewer