

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-028356**Date Inspected:** 08-Sep-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2030**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Barry Drake 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 OBG**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 12E-PP111.1-C1 drop-in side plate outside, QA randomly observed ABF/JV qualified welder Rick Clayborn and Erick Sparks continuing to perform CJP groove welding repair on a Seismic Performance Critical Member (SPCM) due to Ultrasonic Testing (UT) detected defects on welded splice butt joint. The welder was noted setting up the Miller Proheat 35 Induction Heating System with the heater blanket put in place from the outside to preheat the repair areas to 225°F prior and during excavation using carbon air arc gouging. The welder was given approval to excavate four (4) repair at various locations per Caltrans approved Request for Weld Repair (RWR) #201209-052 to #201209-055. The welders ground smooth the groove of the excavation and after its completion, ABF QC Salvador Merino performed Magnetic Particle Testing (MT) on the removal of the defects with no relevant defect noted during the test. This QA performed the MT verification and noted same result.

The welder pumped up the Miller Proheat 35 Induction Heating System preheats to 325°F and as soon as the required temperature was attained both welders started performing the welding repair. Welders Rick Clayborn and Erick Sparks were observed manually welding in 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing Caltrans approved welding procedure ABF-WPS-D15-1004 Repair. Erick Sparks noted welding repair at Y=1995mm having boat shape excavation profile of 120mm x 15mm wide x 10mm deep while welder Rick Clayborn was noted welding repair at combined excavation of Y=590mm and Y=615mm with combined boat shape excavation profile of 95mm long x 15mm

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wide x 8mm deep and at Y=1150mm having excavation profile of 70mm long x 15mm wide x 8mm deep. During welding, ABF QC Salvador Merino was noted monitoring the welders' welding parameter with measured working current of 137 amperes and 125 amperes respectively for Rick Clayborn and Erick Sparks on the 3.2mm diameter E7018H4R electrode. After the welding completion on the outside repairs, the welder performed the Post Weld Heat Treatment (PWHT) of 450°F using the same Miller Proheat 35 Induction Heating System and held it for one hour as required. The two welders have moved to another location OBG 12W-PP111.1-C1 drop-in side plate inside and outside and performed more welding repairs. The following weld repairs were noted excavated and welded during the shift;

Y-location	Length	Width	Depth	RWR#	Remarks
1. 590mm	95mm	15mm	8mm	201209-052	Combined/completed.
615mm		201209-053			
2. 1150mm	70mm	15mm	8mm	201209-054	Completed.
3. 1995mm	120mm	15mm	10mm	201209-055	Completed.

At OBG 12W-PP111.1-C1 drop-in side plate inside and outside, the same two ABF welders mentioned above were observed welding repair from inside and outside of the OBG. ABF welder Rick Clayborn was noted inside the OBG performed the excavation and welding repair while ABF welder Erick Sparks was noted outside the OBG. The same steps from preheating to >225°F prior excavation, repair welding at 325°F and post weld heat treatment (PWHT) to 450°F were noted followed during the course of the repairs at this side plate location. Welder Rick Clayborn has completed from inside the repairs listed below;

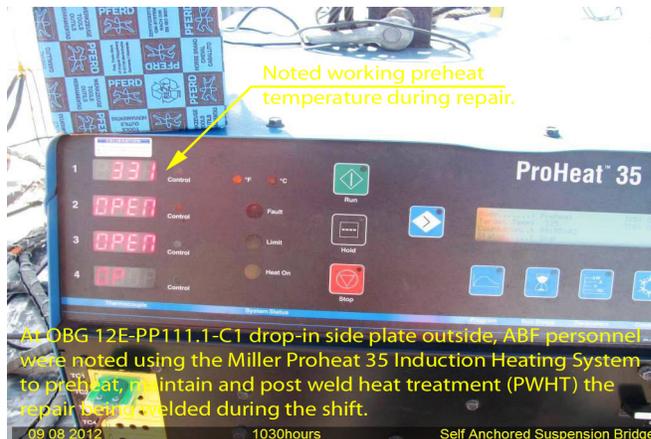
Y-location	Length	Width	Depth	RWR#	Remarks
1. 420mm	95mm	15mm	12mm	201209-062	R3 - completed.
2. 595mm	60mm	16mm	8mm	N/A	R1 - completed.
3. 690mm	45mm	16mm	6mm	N/A	R1 - completed.
4. 1100mm	30mm	18mm	6mm	N/A	R1 - completed.

Welders Rick Clayborn and Erick Sparks have completed from outside the repairs listed below;

Y-location	Length	Width	Depth	RWR#	Remarks
1. 140mm	65mm	40mm	11mm	201209-059	R3 – combined/completed.
160mm		201209-060			
2. 300mm	40mm	90mm	9mm	201209-061	R3 – completed.
3. 1260mm	70mm	16mm	11mm	201209-064	R3 – completed.
4. 1350mm	78mm	20mm	12mm	201209-063	R3 – completed.

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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 Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

**Reviewed By:** Levell, Bill

QA Reviewer