

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-028100**Date Inspected:** 03-Aug-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Julian Razo**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 OBG 13W-W2.1@10,100 drop-in top deck plate inside, QA randomly observed ABF/JV qualified welder Rick Clayborn continuing to perform CJP groove welding repair from location Y=0mm to Y=2000mm. The welder was observed welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1004-Repairs. This repair has been excavated and being welded with Caltrans approved Request for Weld Repair (RWR) #201207-016. Since the area from Y=0mm to Y=2000mm has numerous UT detected defects with various sizes and depths, the welder decided to excavate the whole length between two floor beams PP121.5 and PP122. The repair excavation was preheated to more than 325 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket put in plate on top of the deck prior/during welding. During the shift, ABF QC Julian Razo was noted monitoring the welder with measured working current of 135 amperes on 3.2mm E7018H4R electrode. At the end of the shift, repair welding at location mentioned above was partially completed and the welder performed the Post Weld Heat Treatment (PWHT) of 450°F where repair was completed and held it for one hour as required.

At OBG 13W/14W-LS1N deck stiffener flange inside, QA randomly observed ABF/JV qualified welder Lou Xiao Hua continuing to perform PJP groove welding root pass to fill pass on the deck stiffener flange T-joint. The welder was observed perform manual welding in the 4G (overhead) position utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E9018H4R electrode and implementing Caltrans approved Welding

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Procedure Specification (WPS) ABF-WPS-D15-1162-4. The stiffener flange plate has a bevel groove being welded PJP T-joint to the longitudinal stiffener. The plates were preheated to more than 200 degree Fahrenheit using Miller Proheat 35 Induction Heating System. During welding, ABF Quality Control (QC) Julian Razo was noted monitoring the welding parameters of the welder with measured working current of 125 amperes. During the shift, cover pass welding was completed on the two wing plates and the welder held the same preheat of >200 degree Fahrenheit for three hours after welding as required. The welder has moved to the other deck stiffener flange 13W/14W-LS5N and performed fit up and tack welding.

At OBG 13W-WK-S1 and S2 K plate stiffener inside, QA randomly observed ABF/JV qualified welder Chao Tran perform CJP groove welding root pass to cover pass on the K plate stiffener splice butt joint. The welder was observed perform manual welding in the 1G (flat) for S2 and 4G (overhead) for S1 utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E9018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1030. The stiffener plates have single V groove butt joint preparation. Prior welding, the splice joint fit up was verified by this QA and noted 5mm root opening with misalignment of 2mm maximum which deemed acceptable to contract requirements. The plates were preheated to more than 150 degree Fahrenheit using propylene gas torch. During welding, ABF Quality Control (QC) Julian Razo was noted monitoring the welding parameters of the welder with measured working current of 125 amperes. At the end of the shift, cover pass welding was completed at stiffener S2 while S1 was still continuing.

At OBG 13W-W2.1 @ 12570mm inside, QA observed ABF welder Richard Garcia continuing to perform excavation on the UT detected defect removal of the welded butt joint. The welder was using carbon air arc gouging with the welded joint being excavated preheated to 225°F using Miller Proheat 35 Induction Heating System prior excavation. The location being excavated was from Y=9250mm to Y=12570mm. Since the UT detected defects have numerous various depths and lengths that are almost continuous, ABF have decided to excavate the whole length from underneath the welded butt joint. The repair excavation is being made through Caltrans approved RWR #201208-001. During the shift, carbon air arc gouging was completed and the welder started smooth grinding the groove of the excavation.

The same welder was tasked to perform welding repair at OBG 13W/14W top deck plate A1. At this repair location, the welder has excavated UT detected defect at Y=4405mm with boat shape dimensions 90mm long X 20mm wide X 9mm deep. The defect removal excavation was tested by ABF QC Julian Razo using Magnetic Particle Testing (MT) and it was verified by this QA. The repair area was preheated to more than 325°F using Miller Proheat 35 Induction Heating System prior and during welding. After the completion of the repair, the welder performed Post Weld Heat Treated (PWHT) at 450°F for one hour as required.

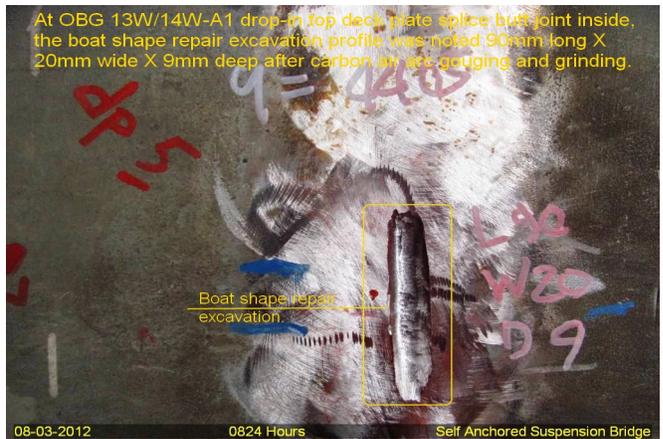
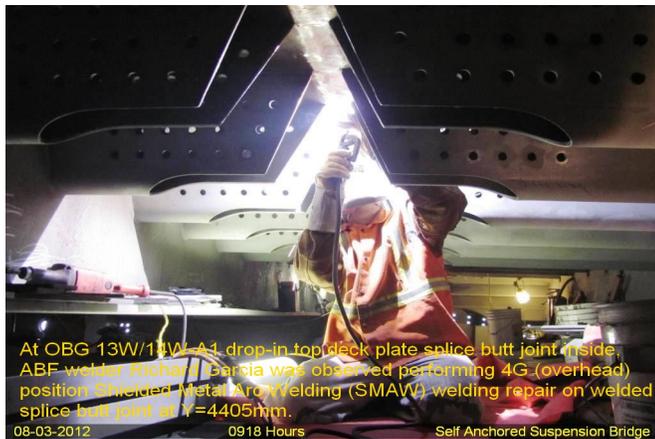
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At OBG 13W/14W-A1 drop-in top deck plate splice butt joint inside, ABF QC Julian Razo was observed performing Magnetic Particle Testing (MT) on the excavation of defect removal at Y=4405mm.



At OBG 13W-WK-S1 K-plate stiffener #1 splice butt joint inside, ABF welder Chau Tran was observed performing 4G (overhead) position Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on butt joint.



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.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer