

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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-022180**Date Inspected:** 28-Mar-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Steve Jensen and Gary Ersham**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 7W/8W LS4 longitudinal stiffener inside, QA randomly observed ABF welder Fred Kaddu perform base metal restoration welding (buttering) on one side of the plate due to excessive root gap (10mm). The welder was noted welding in 3G (vertical) using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E9018H4R electrode. Prior welding, the plate to be buttered was preheated to greater than 200 degrees Fahrenheit using the propane gas torch. After the completion of the base metal restoration, the welder was noted welding the root pass to fill pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 38mm. The joint has a double V joint preparation that was welded from one side and after the completion from one side to be back gouged, Non Destructive Testing (NDT) tested using Magnetic Particle Testing (MT) and back welded to the other side. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1. 5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Gary Ersham was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC Gary Ersham was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

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At OBG 9W/10W side plate 'C2' (0mm to 2640mm) inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding fill pass to cover 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 has 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) Steve Jensen was noted monitoring the welding parameters of the welder. At the end of the shift, cover pass welding was still ongoing and should continue tomorrow.

At OBG 10E/11E LS5 longitudinal stiffener inside, QA randomly observed ABF welder Hua Qiang Hwang perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding root pass to cover pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 30mm. The joint has a double V joint preparation that was welded from one side and after the completion from one side to be back gouged, Non Destructive Testing (NDT) tested using Magnetic Particle Testing (MT) and back welded to the other side. Prior welding, the fit up was inspected and accepted by ABF QC John Pagliero. QA also verified the root gap of less than 7mm and alignment of less than 2mm which deemed acceptable to the contract requirements. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC John Pagliero was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC John Pagliero was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. During the shift, cover pass welding on one side of the butt joint was completed when the welder left the job site and went for his medical appointment. The welder was instructed by QC to hold the preheat of >200° F for three more hours after welding as required.

At OBG 10W/11W side plate 'C' outside, QA randomly observed ABF welder Rick Clayborn (I.D. 2773) perform overhead (4F) fillet welding of the temporary attachment fitting gear to side plate 'C' . The welder was using Shielded Metal Arc Welding (SMAW) with 1/8" E7018 H4R electrode implementing Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. During welding, the welder was noted preheating the plate prior welding and ABF QC Bonifacio Daquinag was also noted monitoring the welding parameters. After the welding completion of the fitting gear temporary attachments, the welder put in place the steel backing bar that will be used during welding from the inside. During the shift, ABF QC was noted measuring the alignment of the fit up as the welder adjusts the fitting gear to come into acceptable alignment.

At OBG 7W/8W LS1 longitudinal stiffener inside, QA randomly observed ABF welder Xiao Jian Wan perform 3G (vertical) SMAW back welding root pass to fill pass on the stiffener CJP splice butt joint. The joint has a double V joint preparation that was welded from one side using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded was root welded using a ceramic backing, fully welded from one side then back gouged and was ground smooth. The other side was back gouged and ground smooth and was also Non Destructive Testing (NDT) tested

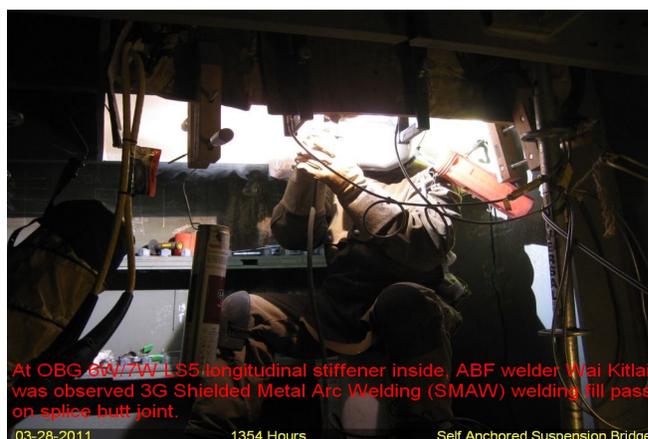
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using the MT. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System located at the opposite side of the plate prior/during welding. QA noted the ABF QC Gary Ersham was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC Gary Ersham was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, fill pass welding on one side of the stiffener LS5 was still continuing and should remain tomorrow. The welder was also told to keep the preheat maintenance of more than 200 degrees Fahrenheit after welding and hold it for three hours as required.

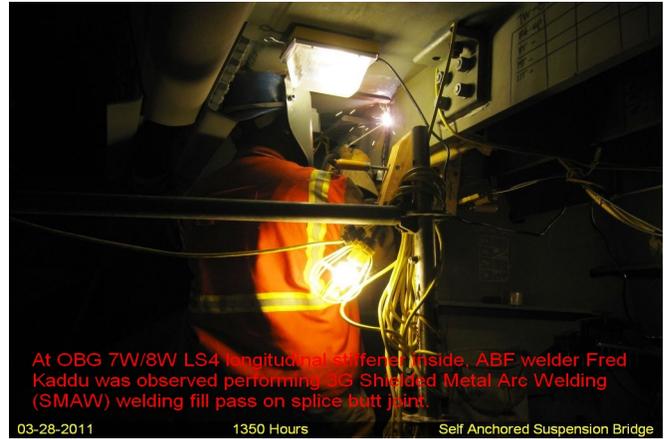
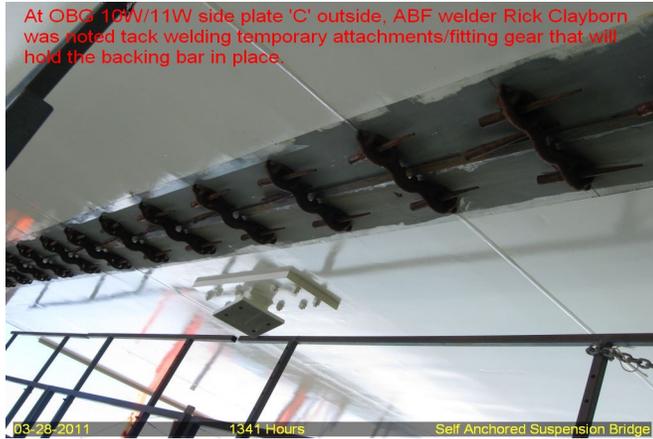
At OBG 6W/7W LS5 longitudinal stiffener inside, QA randomly observed ABF welder Wai Kitlai perform base metal restoration welding on one side of the plate due to excessive root gap (9mm). The welder was noted butter welding in 3G (vertical) using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E9018H4R electrode. Prior welding, the plate to be buttered was preheated to greater than 200 degrees Fahrenheit using the propane gas torch. After the completion of the buttering, the welder was noted welding the root pass to fill pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 30mm. The joint has a double V joint preparation that was welded from one side and after the completion from one side to be back gouged, Non Destructive Testing (NDT) tested using Magnetic Particle Testing (MT) and back welded to the other side. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Gary Ersham was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC Gary Ersham was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

At tower base plate to 13 meters elevation and at tower south shaft splice number two (elevation 83meters), the sites were noted idle and no welders were seen during 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.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer