

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-021817**Date Inspected:** 16-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:** Pat Swain and John Pagliero**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 2E-PP13.5-E5-N LSW 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 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. Prior welding, the fit up was inspected and accepted by ABF QC Pat Swain. 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 Pat Swain was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC Pat Swain was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, cover pass welding on both sides of the butt joint was completed and the welder was instructed by QC to hold the preheat for three more hours after welding as required.

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QA randomly observed ABF/JV qualified welder Rory Hogan continuing to perform CJP groove (splice) back welding fill pass on Orthotropic Box Girder (OBG) 9E/10E bottom plate 'D1' outside. The welder was observed back welding in the 4G (overhead) 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-D15-3110-4. The welder was using a track mounted welder holder assembly that was remotely controlled. The joint being welded has the backing bar gouged using the Esab Plasma Arc machine and was ground smooth. The gouged and ground splice butt joint was also Non Destructive Testing (NDT) tested using the Magnetic Particle Testing (MT). The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and by moving the blanket to the side of the weld being welded during welding. The vicinity was also properly protected from wind and other climatic conditions. ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder. During the shift, fill pass welding was still continuing and should remain tomorrow.

At OBG 10E/11E edge plate 'F' to top deck plate 'A' corner transition inside, ABF welder Fred Kaddu was observed performing SMAW welding fill pass to cover pass on the transition joint. The welder was observed manually welding in the 2G (horizontal) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040A. After welding, the welder has smooth ground the transition and the result was deemed visually in compliance to the contract requirements.

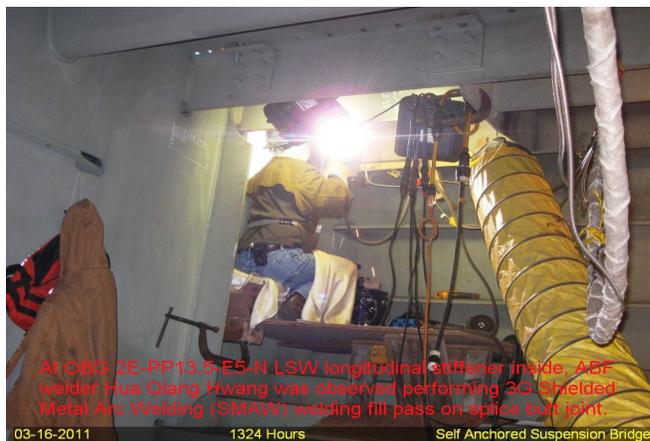
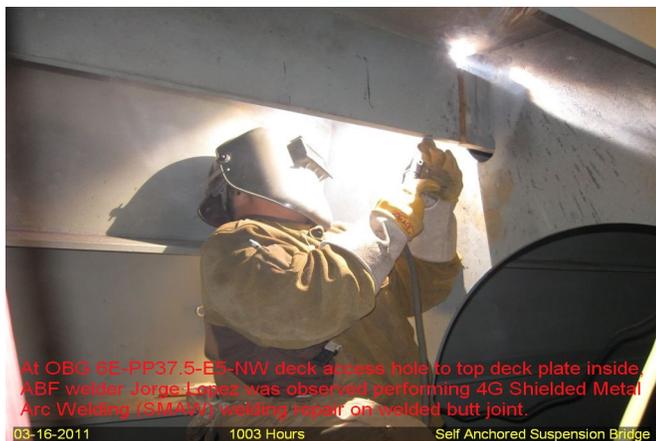
The same welder has moved to OBG 10E/11E edge plate 'B' outside and performed welding repair. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1001-Repairs. The repair location at Y=150mm and having an excavation profile of 110mm long x 25mm wide x 19mm deep was preheated to more than 140 degree Fahrenheit using propane gas torch prior welding. During the shift, ABF QC John Pagliero was noted monitoring the welder. Prior welding, ABF QC John Pagliero was also observed performing Magnetic Particle Testing (MT) on the excavation. This lone repair was completed during the shift and the welder has moved to another location at OBG 10E/11E edge plate 'B' outside. In this new location, the welder has continued welding fill pass where the previous welder Han Wen Yu has left off.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of eleven lifting lug access hole to top VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the welds and the QC inspection complied with the contract documents.

1. 7W-PP53-W3-#2 & #4 lifting lug access holes inside – QA VT verified
2. 5W-PP31-W4-#2 & #4 lifting lug access holes outside – QA VT/MT verified
3. 4W-PP27-W4-#1, #3 & #4 lifting lug access holes outside – QA VT/MT verified
4. 4W-PP25-W4-#1 to #4 lifting lug access holes outside – QA VT/MT verified

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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