

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-019815**Date Inspected:** 31-Jan-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** 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 1W-PP10.5-W2-LSW longitudinal stiffener inside, QA randomly observed ABF welder Xiao Jian Wan ID #9677 perform 3G (vertical) Shielded Metal Arc Welding (SMAW) welding fill pass on the stiffener Complete Joint Penetration (CJP) 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 it was back gouged and 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 was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, cover pass was completed on one side while fill pass welding was still continuing on the other side and should remain tomorrow. The welder was told to keep the preheat maintenance of more than 200 degrees Fahrenheit after welding and hold it for three hours as required.

At OBG 2W/3W LS5 longitudinal stiffener inside, QA randomly observed ABF welder Hua Qiang Hwang ID

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#2930 perform 3G (vertical) SMAW back welding fill pass to cover 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 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 was closely monitoring the issuance of E9018 electrodes due to its limited exposure time allowed. At the end of the shift, cover pass welding on one side of the stiffener LS5 was completed while the other side was still continuing. The welder was told to keep the preheat maintenance of more than 200 degrees Fahrenheit after welding and hold it for three hours as required.

At OBG 3W-PP19.5-W5-S deck access hole to top deck plate inside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP repair welding. The welder was noted welding in 4G (overhead) position utilizing 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 MT prior welding. During welding, ABF QC Gary Ersham was noted monitoring the welder and his welding parameters. QA noted parameter during 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.	220mm	120mm	25mm	7mm	Completed
2.	460mm	100mm	25mm	8mm	Completed
3.	1950mm	100mm	25mm	8mm	Completed
4.	3185mm	100mm	24mm	6mm	Completed
5.	3415mm	120mm	25mm	11mm	Completed

At OBG 4W-PP24.5-W5-S 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 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 MT prior welding. During welding, ABF QC Gary Ersham was noted monitoring the welder and his welding parameters. The locations of the repairs were noted below;

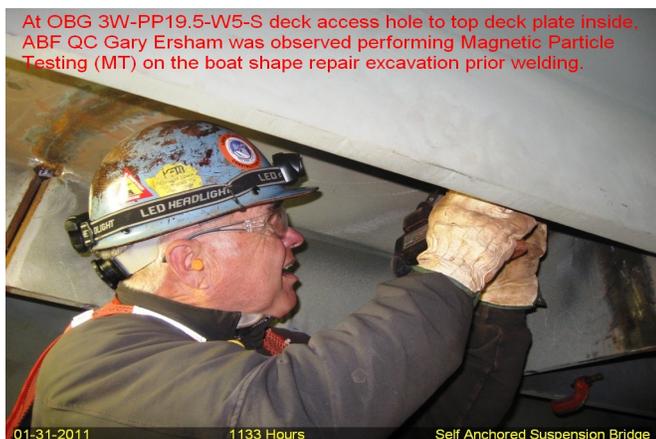
Location	Y-dimension	Length	Width	Depth	Remarks
1.	3170mm	130mm	26mm	15mm	Completed
2.	2190mm	110mm	25mm	16mm	In progress

At OBG 2W-PP13.5-W5-S deck access hole to top deck plate inside, QA randomly observed ABF/JV qualified welder Han Wen Yu perform CJP repair welding. The welder was noted welding in 4G (overhead) position utilizing SMAW with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repairs. Due to numerous repairs found during Ultrasonic Testing (UT), the total length (4380mm) of the back weld was excavated using a carbon arc gouging then ground smooth

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using a disc grinder and die grinder. The repair excavation was tested with MT prior welding. During welding, ABF QC Gary Ersham was noted monitoring the welder and his welding parameters. At the end of the shift, repair welding was still continuing and should remain tomorrow.



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 Sang Le 916-764-5650, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer
