DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-022542
Date Inspected: 14-Apr-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Job Site

CWI Name: Fred Von Hoff and William Sherwood

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ 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 10W/11W top deck plate ‘A5’ outside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP repair welding. The welder was noted welding in 1G (flat) position utilizing SMAW with 1/8” diameter E7018H4R electrode implementing new Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1003 Repair. The new repair procedure includes putting in place a copper backing alongside the typical steel backing bar when the repair excavation is expected to occur at the edge of the steel backing. The first time welding repair located at Y=5100 and having a boat shape profile of 125mm long x 20mm wide x 22mm deep was tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC John Pagliero was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 135 amperes which appears in compliance to the WPS. During the shift, repair welding at location mentioned above was completed.

At OBG 9E/10E bottom plate ‘D1’ inside, QA randomly observed ABF/JV qualified welder Jorge Lopez 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 Repair. The first time welding repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC William Sherwood was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 130 amperes which

appears in compliance to the WPS. At the end of the shift, welding repair at the following locations was completed. The locations of the repairs were noted below;

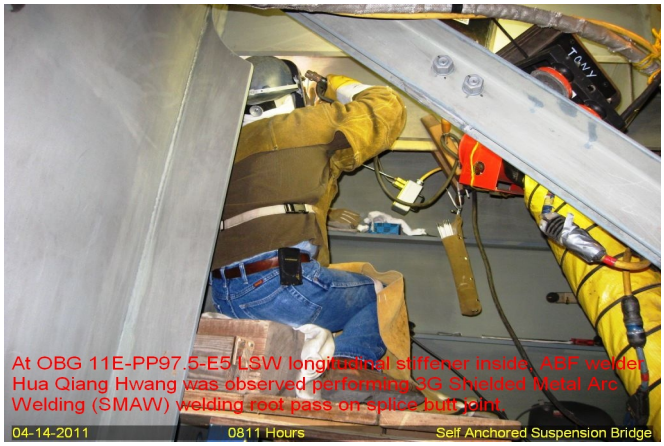
Location	Y-dimension	Length	Width	Depth	Remarks
1. D1	450mm	100mm	26mm	14mm	Completed/R1
2. D1	580mm	140mm	25mm	18mm	Completed/R1
3. D1	50mm	80mm	25mm	15mm	Excavated

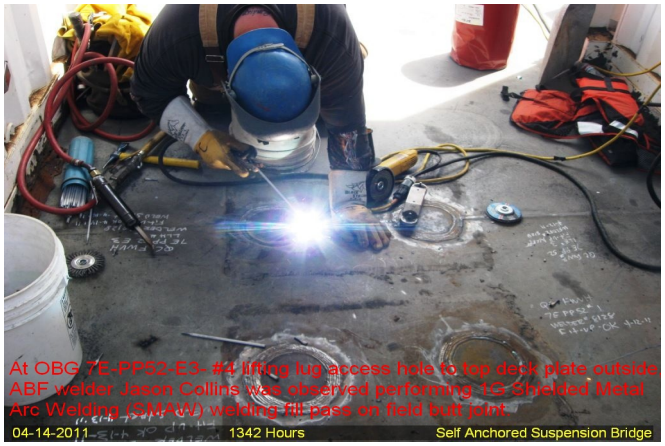
At OBG 11E-PP97.5-E5 LSW longitudinal stiffener inside, QA randomly observed ABF welder Hua Qiang Hwang perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding root pass to cover pass on the one side of the stiffener splice butt joint. The stiffener plates being 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 John Pagliero was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC Fred Von Hoff was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. During the shift, cover pass welding on both sides of the stiffener was completed and the welder was instructed by QC to hold and maintain the preheat of 200 ° F for three more hours after welding as required. This access hole location was originally intended to be an access hole but to be relocated (for unknown reason) after the two longitudinal stiffeners (LSW & LSE) have already been cut. The two cut longitudinal stiffener weld locations are being welded to restore the plate.

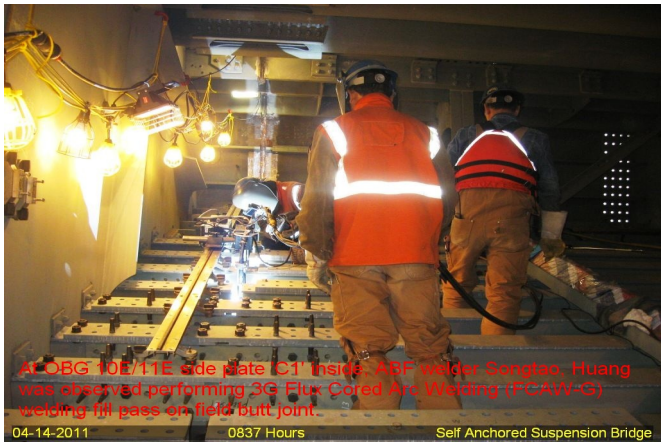
At OBG 10E/11E side plate 'C1' inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding fill pass on the splice butt joint. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a dual shield Flux 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 had 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) William Sherwood was noted monitoring the welding parameters of the welder. At the end of the shift, welding of the fill pass on the splice butt joint was still continuing and should remain tomorrow.

At OBG 6E-PP44-E4#2 top deck plate outside – ABF welder Jason Collins was observed 1G SMAW welding repair on the welded infill plate to top deck plate butt joint. The first time weld repair located at Y=215mm and having boat shape excavation of 75mm long x 20mm wide x 10mm deep was tested using Magnetic Particle Testing (MT) prior welding. The welder was noted using 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repair. During welding, ABF QC Fred Von Hoff was noted monitoring the welder's welding parameters. After the completion of the repair, the welder has moved to 7E-PP52-E3- #4 and performed fit up of the lifting lug access hole infill plate to top deck

plate. The fit up was checked by ABF QC Fred Von Hoff and was verified by this QA. The welder welded the root pass and continued the fill pass until the end of the shift.







Summary of Conversations:

No significant conversation ocurred 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