

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: 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-017901**Date Inspected:** 05-Nov-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	William Sherwood and John Pagliuca			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 8E/9E top deck plate 'A' inside, QA observed welder Rick Clayborn perform tack welding of temporary attachment/ fit up gear for backing bar. The welder was noted using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode. ABF QC William Sherwood was noted monitoring the welder. During the shift, the welder was noted pushing the backing bar close to the deck plate 'A' with the aid of wedges that were put in place against the 'U'-ribs. The welder has started pushing the backing bar from the North side to the South side. At the end of the shift, installation of the backing bar on the bottom of the top deck plate was still continuing and should continue on Monday.

At OBG 5E/6E LS4 longitudinal stiffener inside, QA randomly observed ABF welder Xiao Jian Wan ID #9677 continuing to perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) back welding cover pass on the other side of the stiffener 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 is a high strength plate material HPS 485W which has a thickness of 35mm was root welded using a ceramic backing, and fully welded on one side. The splice joint was preheated and maintained 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. During the shift, the welder has completed welding cover of the stiffener and held the preheat maintenance of 200

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degrees F for three hours after 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 was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed.

At OBG 5E/6E LS3 longitudinal stiffener inside, QA randomly observed ABF welder Hua Qiang Hwang ID #2930 continuing to perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) back welding cover pass on the other side of the stiffener 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 is a high strength plate material HPS 485W which has a thickness of 30mm was root welded using a ceramic backing, and fully welded on one side. The splice joint was preheated and maintained 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. During the shift, the welder has completed welding the stiffener and held the preheat maintenance of 200 degrees F for three hours. 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 was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed.

At OBG 6W/7W side plate 'E2' inside, this QA performed 10% Magnetic Particle Testing (MT) verification on the welded splice butt joint. QA was using Parker Contour Probe Model DA 400 with serial number 16989 electromagnetic yoke with red magnetic powder as detecting media. During MT, QA found an elliptical shape linear indication that has a length of 45mm and a width of 8mm that was close to the weld or to the heat affected zone. According to the information that was written on the wall near the butt joint, the MT was performed by William Sherwood. QA informed ABF QC Bonifacio Daquinag about the presence of linear indication and QC responded and said he will ask ABF to fix and repair the linear indication. Please see TL-6028 report for more information.

At OBG 7E/8E side plate 'C' (3240mm to 7900mm) inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 perform CJP groove (splice) welding cover pass on the splice butt joint. The welder was observed performing 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 located at the opposite side of the plate prior/during welding. ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

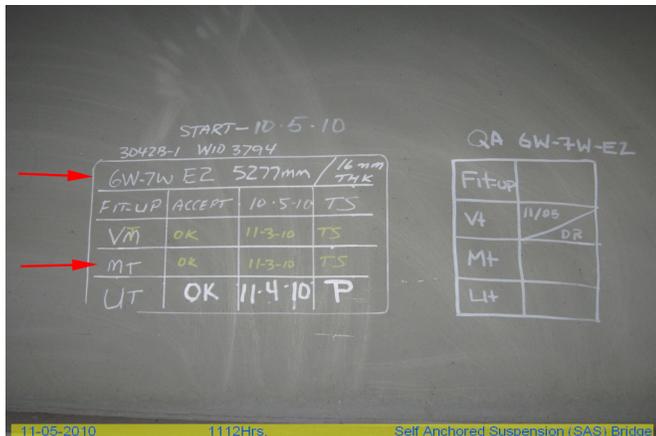
At OBG 3E-PP-19.5-E5-NW ventilation access hole inside, QA randomly observed ABF/JV qualified welder Xiao Jian Wan ID #9677 perform CJP groove welding repair. The welder was observed welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1001-Repairs. The repair excavation 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) using Parker Contour Probe with red magnetic powder as detecting media on the repair excavations. There were no significant defects noted during the test. The following first time repairs were noted excavated and the item

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number one below was being welded during the shift;

Location	Y-dimension	Length	Depth	Remarks
1. 3E-PP-19.5-E5-NW	1235mm	130mm	16mm	In progress
2. 3E-PP-19.5-E5-NW	1645mm	125mm	20mm	Excavated
3. 3E-PP-19.5-E5-NW	3340mm	210mm	17mm	Excavated
4. 3E-PP-19.5-E5-NW	4130mm	160mm	18mm	Excavated



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 Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer