

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-024879**Date Inspected:** 29-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**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 Fred Von Hoff			EWI 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:	SAS Tower		

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 9E-PP77-E4-#1 & 2 lifting lug access hole to top deck plate outside – ABF welder Mike Jimenez was observed 1G SMAW welding root pass to cover pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8” and 5/32” diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1070. Prior welding, ABF QC Fred Von Hoff was observed inspecting the fit up of the butt joints. QA verified the fit up alignment of the two access holes which deemed acceptable to the contract requirements. During welding, ABF QC Fred Von Hoff was noted monitoring the welder’s welding parameters. At the end of the shift, cover pass welding access on hole #1 was completed while access hole #2 was still continuing at the end of the shift.

At OBG 9E-PP77-E2#4 top deck plate inside - ABF welder Jorge Lopez was observed 4G SMAW back welding cover pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8” diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1110A. During welding, ABF QC Fred Von Hoff was noted monitoring the welder’s welding parameters. During the shift, cover pass welding on this location was completed and the welder has moved to another access hole.

At OBG 9E-PP77-E3# 1, 2 & 4 lifting lug access holes outside, QA randomly observed ABF/JV qualified welder Jorge Lopez perform CJP repair welding. The welder was noted welding in 1G (flat) position utilizing SMAW

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

with 1/8" diameter E7018H4R electrode implementing new 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 Fred Von Hoff was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 130 amperes which appears in compliance to the WPS. The locations of the repairs were noted below;

Location	Y-dimension	Length	Width	Depth	Remarks
1. LLAH #1	370mm	80mm	25mm	12mm	Completed (R1)
2. LLAH #2	240mm	95mm	30mm	12mm	Completed (R1)
3. LLAH #4	535mm	80mm	20mm	13mm	Completed (R1)

At OBG 9E-PP79-E3-#3 lifting lug access hole outside, the same welder has also performed first time repair;

4. LLAH #3	20mm	90mm	20mm	13mm	Completed (R1)
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At OBG 11E/12E edge plate 'F' outside, QA randomly observed ABF/JV qualified welder Hua Qiang Hwang perform root pass to fill welding on the Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with steel backing bar. ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 135 amperes which appears in conformance to the contract requirements. Prior welding, the fit up alignment was check by ABF QC William Sherwood and verified by this QA. Measured offset was 2mm and the root opening was 5mm to 10mm which deemed in compliance to the approved WPS.

At Tower East Shaft Splice #3 @Elevation 114 meters;

At East (B-C) corner, lower splice plate; This QA Inspector randomly observed ABF welding personnel Salvador Sandoval continuing to perform production welding on the bottom half of the lower splice plate using the self shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-3. The welder was noted 3F (vertical) fillet welding the splice plate to interior corner closure plate of the tower shaft. This QA Inspector observed ABF personnel using Miller Proheat 35 Heat Induction System and propylene gas torch to preheat the plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. The parameters measured during welding were 253 amps; 21.7 volts and travel sped of 100 mm per minute with calculated heat input of 3.3 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. At the end of the shift, 3F fillet welding was still continuing and should remain tomorrow. ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

At Tower East Shaft Splice #3 @Elevation 114 meters;

At Southeast (C-D) corner, lower splice plate; This QA Inspector randomly observed ABF welding personnel Xiao

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

Jian Wan continuing to perform production welding on the bottom half of the lower splice plate using the self shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-2. The welder was noted 3F (vertical) fillet welding the splice plate to interior corner closure plate of the tower shaft. This QA Inspector observed ABF personnel using Miller Proheat 35 Heat Induction System and propylene gas torch to preheat the plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. The parameters measured during welding were 245 amperes; 22.0 volts and travel speed of 95 mm per minute with calculated heat input of 3.4 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. At the end of the shift, 3F fillet welding was still continuing and should remain tomorrow. ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

At Tower Base Elevation 13Meters Shear Plate Electro Slag Welding (ESW);

ABF personnel were noted preparing access ladders for the next new location at 80-100mm transition butt weld joint E-043 location 'Q' which is tentatively scheduled to be welded Thursday June 30, 2011. ABF welders Jeremy Dolman and Richard Garcia were also noted tack welding sump plate at the bottom of the joint and run off tab on top of the joint. The welders were noted using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and the plates were preheated to more than 225°F prior tack welding. ABF QC Jesse Cayabyab was noted monitoring the welders during the shift.



WELDING INSPECTION REPORT

(Continued Page 4 of 4)



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