

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-025086**Date Inspected:** 11-Jul-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 Fred Vonn Hoff**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:** 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 11E/12E edge plate 'B' outside, QA randomly observed ABF/JV qualified welder Han Wen Yu perform root pass 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) Fred Vonn Hoff was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 135 amperes on a 1/8" diameter E7018H4R electrode which appears in conformance to the contract requirements. At the end of the shift, SMAW root pass welding was still continuing and should remain tomorrow.

At OBG 11E/12E side plate 'C2' (4278mm to 5278mm) inside, QA randomly observed ABF/JV qualified welder Wai Kitlai 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 has a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using propylene gas torch prior welding. During welding, ABF Quality Control (QC) Pat Swain was noted monitoring

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

the welding parameters of the welder. The welding parameters measured at the time of welding were 270 amperes, 25 volts with travel speed of 360mm per minute and calculated heat input of 1.125Kj/mm which appears in compliance to the contract requirements. 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 11E/12E side plate 'E1' (0mm to 300mm) inside, QA randomly observed ABF/JV qualified welder Hua Qiang Hwang continuing to perform CJP groove (splice) welding fill pass to cover pass on the splice butt joint at the corner of edge plate 'F' where the track mounted Bug-o nozzle holder has limited access . The welder was observed perform manual 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 backing bar. During welding, ABF Quality Control (QC) Pat Swain was noted monitoring the welding parameters of the welder. During the shift, cover pass welding at this location was completed and the welder has moved to the bottom of side plate 'E1' (4278mm to 5278mm) corner of bottom plate 'D1' where the track mounted Bug-o nozzle holder has also limited access. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

QA randomly observed ABF/JV qualified welder James Zhen perform CJP groove back welding fill pass on OBG 10E/11E side plate 'E1' outside. The welder was observed 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 welders were 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 to greater than 150 degree Fahrenheit using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and maintained by moving the heater blanket at the side of the plate being welded during welding. The vicinity was properly protected from wind. During welding, ABF Quality Control (QC) Fred Vonn Hoff was noted monitoring the welding parameters of the welder. The measured welding parameters during welding were 220 amperes, 24 volts with travel speed of 190 mm per minute and calculated heat input of 1.67Kj/mm which appears in compliance with the contract requirements. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

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

ABF QC John Pagliero and this QA performed a joint fit up verification on the Electro Slag Welding (ESW) T-joint S-042 at location 'L' scheduled to be welded tomorrow July 12, 2011. The measured root gap was noted 19.2mm minimum and 24mm maximum. There was no lesser than 16mm nor more than 25mm root gap noted from the bottom to the top of the T-joint. With the measurements that were recorded during the fit up verification, the fit up of the weld T- joint was deemed in compliance to the contract requirements.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)



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