

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-024240**Date Inspected:** 03-Jun-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**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 Tower Base East Shaft Skin Plate 'B' to Diaphragm Plate, elevation 9 meters;

At Tower Base East Shaft Skin Plate 'B' to 45mm thick diaphragm plate weld joint #045, this QA Inspector randomly observed ABF personnel Wai Kitlai continuing to perform production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 45mm thick skin plate 'B' and 45mm thick diaphragm plate. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G)) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to and after welding. This QA Inspector observed QC Inspector Pat Swain using a Fluke infra red temperature gauge to verify the preheat temperature of more than 225°F. This QA Inspector performed a verification of the welding parameters and observed 273 amperes and 24.0 volts with a travel speed of 536 mm per minute with equivalent heat input of 0.73 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. The joint was previously welded but portion of it was not welded. During the shift, the welder has completed the PJP weld joint except where the drop in will be installed and welded in place after the Electro Slag Welding of the shear plate. After the completion of the weld joint, ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 225°F as required. ABF personnel were using Miller Proheat 35 Induction Heating

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System to hold the preheat that was programmed to shut off after three hours.

At Tower Base North Shaft Skin Plate 'B' to Diaphragm Plate, elevation 9 meters;

At Tower Base North Shaft Skin Plate 'B' to Diaphragm Plate weld joint #046, this QA Inspector randomly observed ABF personnel Hua Qiang Hwang continuing to perform production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 45mm thick skin plate and 45mm thick diaphragm plate. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. The joint was previously welded but portion of it was not welded. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to welding. This QA Inspector observed QC Inspector Pat Swain using a Fluke infra red temperature gauge to verify the preheat temperature of more than 225°F. This QA Inspector performed a verification of the welding parameters and observed 293 amperes and 24.3 volts with a travel speed of 443 mm per minute with equivalent heat input of 0.96 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. During the shift, the welder has completed the PJP weld joint except where the drop in will be installed and welded in place after the Electro Slag Welding of the shear plate. After the completion of the weld joint, ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 225°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 South Shaft, location 'G' of weld number S-045, ABF welder Hua Qiang Hwang was observed grinding the cover of the previously Electro Slag Welding (ESW) welded T-joint due to surface profile. After the completion of cover grinding at Y=7800mm (300mm long), ABF QC Pat Swain was noted performing Magnetic Particle Testing (MT) on the ground surface of the joint. The MT was accepted by QC and the welder has started preheating the weld joint to more than 225°F and after attaining the required preheat temperature the welder welded the ground cover of the joint.



Summary of Conversations:

No significant conversation occurred today.

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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.

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| Inspected By: | Lizardo, Joselito | Quality Assurance Inspector |
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| Reviewed By: | Levell, Bill | QA Reviewer |
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