

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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027297**Date Inspected:** 10-Mar-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Bernie Docena**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 Shear Plate (80mm) to Diaphragm Plate (45mm) weld joint #040(5 & 6), 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 80mm thick West shear plate and 45mm thick outer West external 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 Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 286 amperes and 24.5 volts. 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 and right 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 325°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat.

After the welding completion of the weld joint mentioned above, the welder moved to PJP T-joint # W040/7. This QA Inspector randomly observed ABF personnel Wai Kitlai perform root pass production 1G welding on the

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Partial Joint Penetration (PJP) of T-joint between the 80mm thick West shear plate and 45mm thick outer West external 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 Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. After the welding completion of the root pass, ABF QC Bernie Docena was observed performing MT on the root welded T-joint. No relevant indications were observed. This QA also performed random MT on the same welded root pass with noted same result. At the end of the shift, the welder has completed the PJP weld joint and right 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 325°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 Shear Plate (80mm) to Diaphragm Plate (45mm) weld joint #040(9), this QA Inspector randomly observed ABF personnel Jin Pei Wang continuing to perform root pass production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 80mm thick West shear plate and 45mm thick outer West external 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 Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 270 amperes and 25.5 volts. After the welding completion of the root pass, ABF QC Bernie Docena was observed performing MT on the root welded T-joint. No relevant indications were observed. This QA also performed random MT on the same welded root pass with noted same result. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. At the end of the shift, the welder has completed the PJP weld joint and right 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 325°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat.

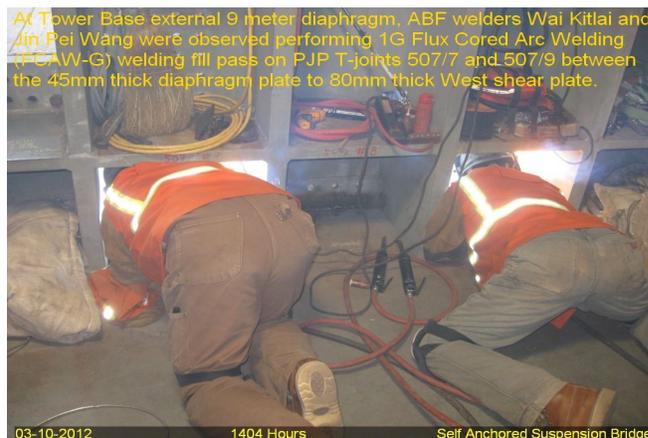
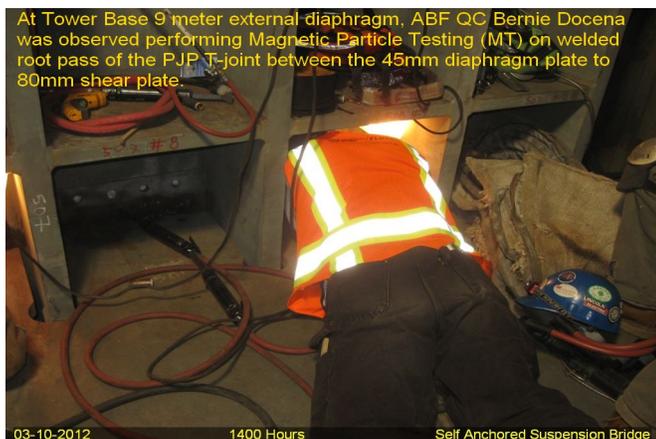
At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of six (6) vent hole infill plates and two (2) lifting lug hole infill plates to top deck plate butt joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. OBG 13W PP119.8 W5 vent hole outside - QA VT/MT verified
2. OBG 13W PP119.5 W5 vent hole outside - QA VT/MT verified
3. OBG 13W PP119.2 W5 vent hole outside - QA VT/MT verified
4. OBG 13W PP118.8 W5 vent hole outside - QA VT/MT verified
5. OBG 13W PP118.5 W5 vent hole outside - QA VT/MT verified
6. OBG 13W PP118.2 W5 vent hole outside - QA VT/MT verified

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- 7. OBG 13W PP118.5 W3 #1 lifting lug hole outside - QA VT/MT verified
- 8. OBG 13W PP118.5 W3 #2 lifting lug hole outside - QA VT/MT verified



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
