

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-027510
Date Inspected: 26-Apr-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

| | | | | |
|------------------------------------|---------------|----------------------------------|-----------|--------|
| CWI Name: | Fred Von 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 Tower Base 13 meter diaphragm, ABF welder Wai Kitlai was observed continuing to perform 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on 250mm long X 70mm thick corner stiffener plate shop marked 356 and weld joint #W138-1. The welder was noted using SMAW with 3.2mm diameter E7018H4R electrode on the root pass and 4.0mm diameter same electrode for the fill pass implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1170. The 70mm thick corner stiffener has a 45 degree double bevel configured for a Partial Joint Penetration (PJP) per detail drawing FWT28 of FWDT-2 Field Welding Schedule drawing. The stiffener plate is being welded to the top of 60 mm shear plate on one side and to the tower skin plate on the other side. The welder was noted welding alternately from one side to the other to avoid distortion. Prior welding, the plates were preheated to more than 150°F using propylene gas torch. This QA Inspector observed QC Inspector Fred Von Hoff using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F. This QA Inspector performed a verification of the welding parameters and observed 186 amperes on the 4.0mm diameter electrode respectively. During the shift, the 2G (horizontal position) PJP T-joint SMAW welding was completed. The 3G (vertical position) weld joint was still outstanding awaiting the Miller Proheat 35 Induction Heating System machine which is not available at the moment.

The same welder has moved to ESW location 'M' weld joint #138-2 and performed 2G root pass using the same

WELDING INSPECTION REPORT

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process as mentioned above. After the completion of the root pass ABF QC Bernie Docena performed the Magnetic Particle Testing (MT) and noted no relevant indication during the test. This QA performed MT verification on the same root pass and noted same result. The welder resumed welding until its completion and leaving the 3G (vertical portion) of the joint outstanding.

Again, after the completion of the above mentioned corner stiffener weld joint, the welder has moved to another ESW location 'G' weld joint W138-4 and performed 2G root pass using the same process. The welder performed fill pass welding until the end of the shift without completing the PJP T-joint.

At Tower Base 13 meter diaphragm, ABF welder Luo Xiao Hua was observed continuing to perform 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on 250mm long X 70mm thick corner stiffener plate shop marked 203 and weld joint #W137-1. The welder was noted using SMAW with 3.2mm diameter E7018H4R electrode on the root pass and 4.0mm diameter same electrode for the fill pass implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1170. The 70mm thick corner stiffener has a 45 degree double bevel configured for a Partial Joint Penetration (PJP) per detail drawing FWT28 of FWDT-2 Field Welding Schedule drawing. The stiffener plate is being welded to the top of 80 to 60 mm transitioned shear plate on one side and to the tower skin plate on the other side. The welder was noted welding alternately from one side to the other to avoid distortion. Prior welding, the plates were preheated to more than 225°F using propylene gas torch. This QA Inspector observed QC Inspector Fred Von Hoff 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 130 and 180 amperes on the 3.2mm and 4.0mm diameter electrode respectively. At the end of the shift, the 2G (horizontal position) PJP T-joint SMAW welding was still continuing at 'C' location between the center and South diaphragm plates. The 3G (vertical position) weld joint was still outstanding awaiting the Miller Proheat 35 Induction Heating System machine which is not available at the moment.

The same welder has moved to ESW location 'G' weld joint #138-4 and performed 2G root pass using the same process as mentioned above. After the completion of the root pass ABF QC Bernie Docena performed the Magnetic Particle Testing (MT) and noted no relevant indication during the test. This QA performed MT verification on the same root pass and noted same result. The welder resumed welding until its completion and leaving the 3G (vertical portion) of the joint outstanding.

Again, after the completion of the above mentioned corner stiffener weld joint, the welder has moved to another ESW location 'G' weld joint W137-4 and performed 2G root pass using the same process. The welder performed fill pass welding until the end of the shift without completing the PJP T-joint.

At Tower Base 9 meter diaphragm, ABF welder Jin Pei Wang was noted removing various wall penetration doubler plates by grinding the tack welded joints to have access on performing Ultrasonic Testing (UT) on Electro Slag Weld (ESW) welded butt joints by ABF QC. This is being done upon request by ABF QC.

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At Tower Base 13 meter diaphragm, ABF QC Blaine Doreca was observed performing Magnetic Particle Testing (MT) on SMAW welded root pass of corner stiffener, PJP T-joint W137-2.



04-26-2012

1100 Hours

Self Anchored Suspension Bridge



04-26-2012

1114 Hours

Self Anchored Suspension Bridge

At Tower Base 13 meter diaphragm, ABF personnel was noted using propane gas torch to preheat the corner stiffener PJP T-joint prior SMAW welding.

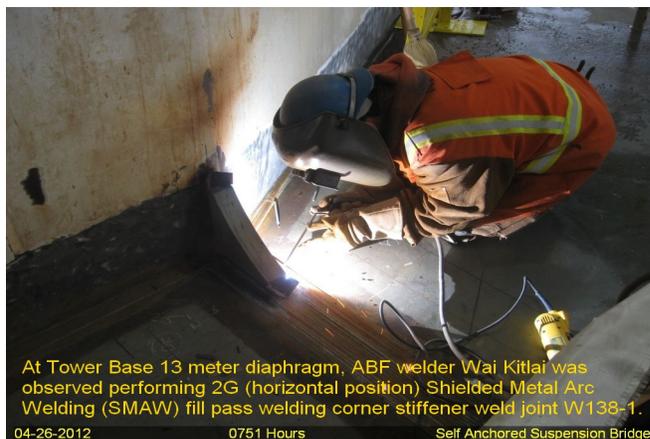


04-26-2012

0817 Hours

Self Anchored Suspension Bridge

At Tower Base 13 meter diaphragm, ABF welder Luo Xiaohua was observed performing 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding fill pass on PJP T-joint W138-4.



04-26-2012

0751 Hours

Self Anchored Suspension Bridge

At Tower Base 13 meter diaphragm, ABF welder Wai Kitlai was observed performing 2G (horizontal position) Shielded Metal Arc Welding (SMAW) fill pass welding corner stiffener weld joint W138-1.

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