

**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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027508**Date Inspected:** 25-Apr-2012**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

<b>CWI Name:</b>	Steve Mc Connell and Fred Von HOWI Present:			<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	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 above 9 meter between inner West and center external diaphragms, this QA Inspector randomly observed ABF personnel Jin Pei Wang continuing to perform multiple position fillet welding on the 466mm wide X 60mm thick square shaped penetration doubler plate shop marked P1128. The welder was noted fillet welding the doubler plate to the 60 mm thick shear plate using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates to more than 150°F prior welding. This QA Inspector observed QC Inspector Steve Mc Connell using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F and measured the welding parameters to 120 amperes. At the end of the shift, 10mm SMAW fillet welding all around the penetration doubler plate was completed and the welder has moved to the lower doubler plate below the 9 meter diaphragm and set up his working platform and welding accessories.

At Tower Base 13 meter diaphragm, ABF welder Wai Kitlai was observed performing 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on 250mm long X 60mm 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 60mm thick corner

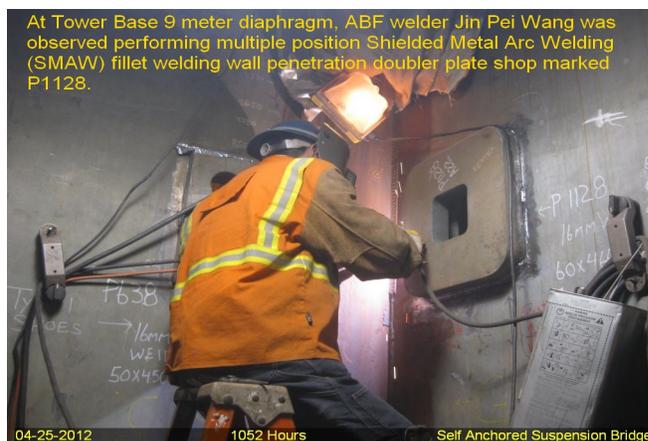
# WELDING INSPECTION REPORT

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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 60mm 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 130 and 170 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 completed at 'L' location between the inner West and outer West 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.

At Tower Base 13 meter diaphragm, ABF welder Wai Kitlai was observed performing 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.

All other welding related activities at 13 meter diaphragm include carbon air arc gouging of SAW welded PJP T-joint termination ends and smooth grinding of the same at various locations.



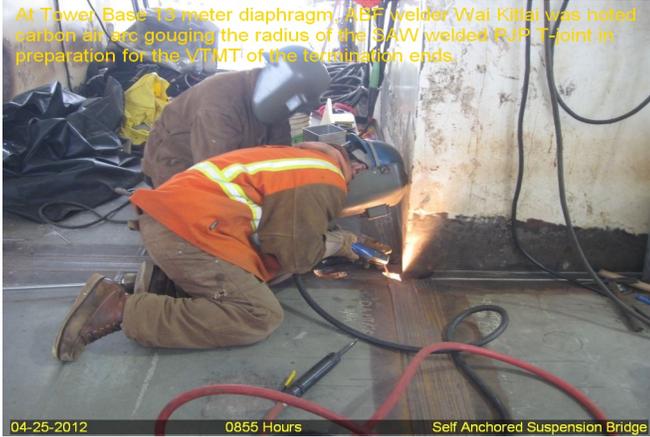
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At Tower Base 13 meter diaphragm, ABF welder Wai Kitlai was noted carbon arc gouging the radius of the SAW welded RJP T-joint in preparation for the VTMT of the termination ends.



04-25-2012 0855 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) welding roof pass on RJP T-joint W138-1 of corner stiffener plate.



04-25-2012 1349 Hours Self Anchored Suspension Bridge

## 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.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer