

**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-028527**Date Inspected:** 05-Oct-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 Jensen and William Sherwood			<b>CWI Present:</b>	<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 OBG		

**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 12E-PP116.5-E5 deck access hole inside, QA randomly observed ABF/JV qualified welder Mike Jimenez continuing to perform CJP groove welding repair on a Seismic Performance Critical Member (SPCM) due to Ultrasonic Testing (UT) detected defect on welded butt joint. The welder was using Miller Proheat 35 Induction Heating System with the heater blanket put on top of the plate to preheat the repair area and its vicinity to 325°F and as soon as the required temperature was attained the welder started performing the welding repair. Welder Mike Jimenez was observed manually welding in 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm and 4.0mm diameter E7018H4R electrode implementing Caltrans approved welding procedure ABF-WPS-D15-1004 Repair. Welder Mike Jimenez was noted welding at location Y=760mm to Y=1610mm. During welding, ABF QC John Hays was noted monitoring the welder's welding parameter with measured working current of 130 amperes on the 3.2mm diameter E7018H4R electrodes. At the end of the shift, repair welding at the location mentioned above was still continuing and the welder has performed the post weld heat treatment (PWHT) of 450°F on the ongoing repair using the Miller Proheat 35 Induction Heating System and held it for one hour as required.

Y-location	Length	Width	Depth	RWR#	Remarks
1.	3930mm	900mm	52mm	12mm	201208-115 R2-in progress.

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## WELDING INSPECTION REPORT

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At OBG 12E-E2.1-@31000mm corner drop-in top deck plate inside, QA randomly observed ABF/JV qualified welder Wai Kit Lai continuing to perform CJP groove welding first time repair on a non-Seismic Performance Critical Member (SPCM) due to Ultrasonic Testing (UT) detected defect on welded splice butt joint. The welder preheated the repair area and its vicinity to >150°F using propylene gas torch prior excavation and then ground smooth the groove of the excavation. After its completion, ABF QC William Sherwood performed Magnetic Particle Testing (MT) on the removal of the defects with no relevant defect noted during the test.

The welder was noted using propylene gas torch to preheat the repair area and its vicinity to >150°F and as soon as the required temperature was attained the welder started performing the welding repair. Welder Wai Kit Lai was observed manually welding in 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing Caltrans approved welding procedure ABF-WPS-D15-1000 Repair Rev. 2. During welding, ABF QC William Sherwood was noted monitoring the welder's welding parameter with measured working current of 126 amperes on the 3.2mm diameter E7018H4R electrodes. During the shift, repair welding at the location listed below were noted;

Y-location Length Width Depth Remarks

1. 19630mm 120mm 25mm 10mm R1 – completed.
2. 20840mm 240mm 32mm 10mm R1 – in progress.
3. 20610mm 120mm 25mm 10mm R1 – completed.

FW Spencer:

At Tower location elevation 145 meters, this QA randomly observed FW Spencer qualified welder Damian Llanos continuing to perform Complete Joint Penetration (CJP) 6G (all position) Shielded Metal Arc Welding (SMAW) welding root pass to cover pass on the 1" weldolet for the 2 ½" domestic water line and 2" end cap on 3" x 2" reducing tee for the 3" diameter utility compressed air line. The welder was noted welding the root pass with 3/32" diameter E6010 electrode and followed by fill pass to cover pass using 3/32" diameter E7018H4R electrode implementing Caltrans approved procedure FW Spencer WPS 1-12-1. The welder was noted preheating and removing the moisture of the joint using a portable propane gas torch prior welding. During welding, ABF QC Steve Jensen was noted monitoring the parameters of the welder. At the end of the FW Spencer shift, CJP welding on the 2" diameter end cap was completed while the 1" diameter weldolet for the 2 ½" domestic water line was still in progress.

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# WELDING INSPECTION REPORT

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At OBG 12E-PP116.5-E5 deck access hole inside, ABF welder Mike Jimenez was noted checking the preheat using a 325 degree temperature crayon during repair welding of the welded butt joint

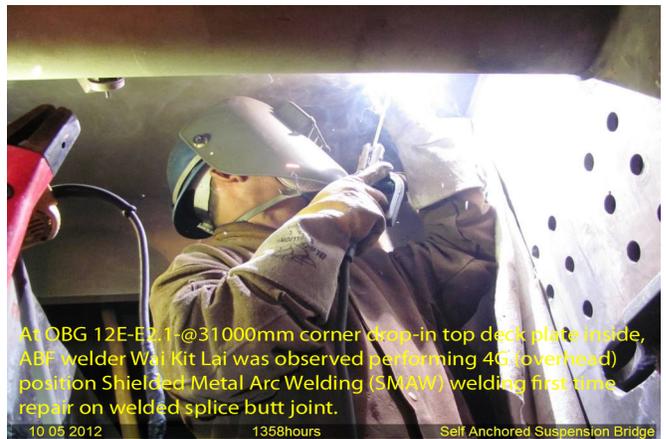


At OBG 12E-PP116.5 E5 deck access hole, ABF personnel were noted using the Miller Proheat 35 Induction Heating System to preheat and maintain the required temperature of 325 degrees Fahrenheit during SMAW repair welding.



At OBG 12E-PP116.5-E5 deck access hole inside, surface profile of the repair excavation from the bottom was noted approximately 1000mm long x 52mm wide x 12mm deep. The groove of the excavation was noted ground and ABF QC William Sherwood performed the Magnetic Particle Testing (MT) on the excavation.

10 05 2012 0812hours Self Anchored Suspension Bridge



At OBG 12E-E2.1 @31000mm corner drop-in top deck plate inside, ABF welder Wai Kit Lai was observed performing 4G (overhead) position Shielded-Metal Arc Welding (SMAW) welding first time repair on welded splice butt joint.

## 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 Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

**Reviewed By:** Reyes, Danny

QA Reviewer

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