

**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-019175**Date Inspected:** 06-Jan-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Gary Ersham 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>	Orthotropic Box Girder		

**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 8W/9W side plate 'E1' inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding cover pass on the splice butt joint. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3042B-1. The joint being welded had a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. During the shift, cover pass welding on the splice butt joint was completed and the welder has moved to 'E2' of the same OBG plate and started SMAW welding root pass on the new location. The welder was using 1/8" diameter E7018H4R electrode implementing Caltrans approved WPS-ABF-D1.5-1040A. At the end of the shift, root pass SMAW welding was still continuing and should remain tomorrow.

At OBG 8W/9W edge plate 'B' outside, QA randomly observed ABF/JV qualified welder Han Wen Yu continuing to perform fill pass welding on the Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS)

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ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with copper backing bar. ABF Quality Control (QC) Gary Ersham was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 128 amperes which appears in conformance to the contract requirements. At the end of the shift, SMAW fill pass welding was still continuing and should remain tomorrow.

At OBG 8W/9W edge plate 'F' outside, QA randomly observed ABF/JV qualified welder Mick Chan continuing to perform fill pass welding on the Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 5/32" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with copper backing bar. ABF Quality Control (QC) Gary Ersham was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 155 amperes which appears in conformance to the contract requirements. At the end of the shift, SMAW fill pass welding was still continuing and should remain tomorrow.

At OBG 8W/9W top deck plate 'A5' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP repair welding. The welder was noted welding in 1G (Flat) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repairs. The three repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Steven Mc Connell was noted monitoring the welder and his welding parameters. Welding parameter measured at the time of welding was 130 amperes which appears in compliance to the WPS. The locations of the repairs were noted below;

Location	Y-dimension	Length	Width	Depth	Remarks
1. A5	480mm	117mm	22mm	14mm	Completed
2. A5	1300mm	175mm	24mm	10mm	Completed
3. A5	1510mm	90mm	25mm	13mm	Completed
4. A5	1720mm	100mm	24mm	11mm	Completed
5. A5	1920mm	75mm	20mm	10mm	Completed
6. A5	2550mm	225mm	24mm	12mm	Excavated
7. A5	2950mm	230mm	25mm	15mm	Excavated
8. A5	3680mm	150mm	26mm	22mm	In progress

At OBG 8W edge plate 'B' (panel point PP69) outside, QA randomly observed ABF Earl Espinoza perform 4G (overhead) position CJP welding 3/8" thick x 3 5/8" wide bottom counter weight connection plate to the edge plate 'B'. The welder was using SMAW with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-D1080 Rev. 1. The connection plate has a 45 degree bevel that was welded from one side and then back gouge and back welded from the other side. During the shift, the welder has completed the welding of the counter weight connection plate on this location and the welder started welding the 2 1/4" wide x 3/8" thick drip plate to the side plate of the OBG at the same location. The drip plate and the surface of the side plate (where the drip plate was welded) were noted ground and the paint coating removed. ABF QC Mike Johnson was noted monitoring the welding and its parameters. At the end of the shift, fillet and PJP welding of the drip plate was still continuing and should continue tomorrow.

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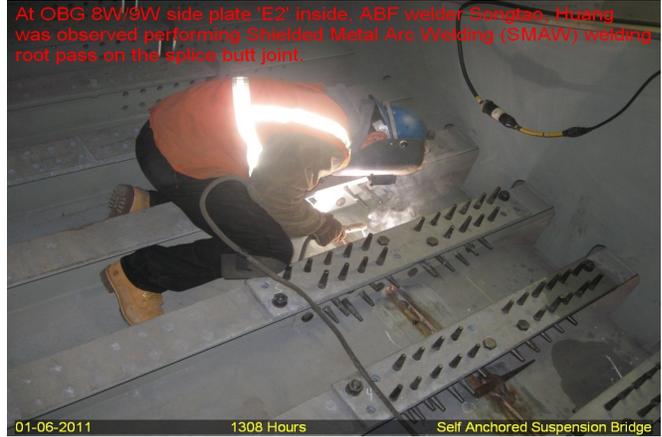
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## Summary of Conversations:

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