

**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-026722**Date Inspected:** 15-Nov-2011**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**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 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 13E/14E vertical plate 'I' inside, QA randomly observed ABF/JV qualified welder Xiao Jian Wan continuing to perform fill pass to cover pass welding on Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 3G (vertical) position utilizing a Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3040B-3. The 25mm equal thickness Seismic Performance Critical Member (SPCM) joint being welded has a single V-groove butt joint with backing bar that will be removed and back gouged then back welded. During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters of the welder. Measured parameters during welding were 255 amperes, 23.5 volts and travel speed of 180mm per minute with calculated heat input of 2.0 Kjoules/mm which deemed in compliance to the contract requirements. During the shift, cover pass FCAW-G welding was completed and the welder has held the preheat of more than 200°F for three more hours after welding as required. The welder has started flush grinding the weld cover.

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 side plate C1.2/C2 splice butt joint. 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

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weld and the QC inspection complied with the contract documents.

1. OBG 12E/13E side plate C1.2/C2 outside - QA VT/MT verified

At OBG 13E/14E bottom plate 'D1' outside, QA randomly observed ABF personnel James Zhen and Wai Kitlai perform plasma arc gouging on the backing bar removal of the splice butt joint. The personnel were using an Esab plasma arc gouging machine that has the nozzle holder attached to a Bug-o track. Gouging of the backing bar was not completed today and should continue tomorrow.

At OBG 13E/14E side plate 'C' inside, this QA performed a preliminary fit up inspection/verification on the butt joint fit up alignment. The OBG side plates were measured 16mm wall thickness. The following measurements in between the stiffeners were noted during the verification;

Location	Measured misalignment	Remarks
(between stiffeners)		
1. 0 – 1	1 mm	Acceptable
2. 1 – 2	1.5	Acceptable
3. 2 – 3	3	Rejectable
4. 3 – 4	2	Acceptable
5. 4 – 5	0	Acceptable
6. 5 – 6	-2	Acceptable
7. 6 – 7	0	Acceptable
8. 7 – 8	0	Acceptable
9. 8 – 9	0	Acceptable
10. 9 – 10	-1.5	Acceptable
11. 10-11	0	Acceptable
12. 11- 12	+5 (approx. 7 inches long)	Rejectable
13. 12 – 13	0	Acceptable
14. 13 – 14	0	Acceptable
15. 14 – 15	-1	Acceptable
16. 15 – 16	0	Acceptable
17. 16 – 17	-1	Acceptable
18. 17 – 18	0	Acceptable

The rejectable misalignments noted above were brought to the attention of ABF QC Bonifacio Daquinag but according to QC, they will ask ABF to fix the misalignments before welding.

At OBG 13E/14E edge plate 'F' inside, this QA performed a preliminary fit up inspection/verification on the butt joint fit up alignment. The OBG edge plates were measured 18mm wall thickness. The following measurements in between the stiffeners were noted during the verification;

Location	Measured misalignment	Remarks
(between stiffeners)		
1. 0 – 1	1 mm	Acceptable

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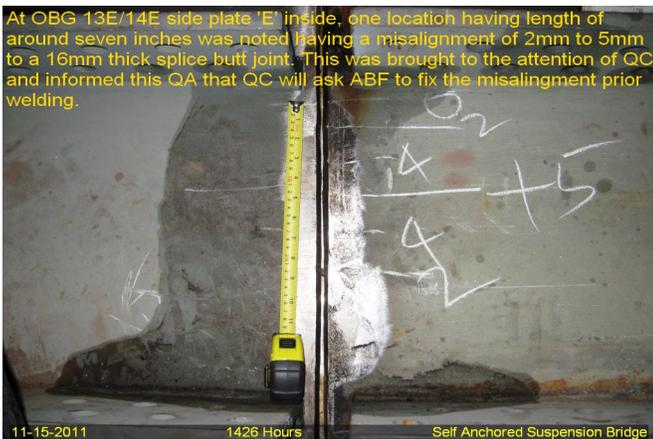
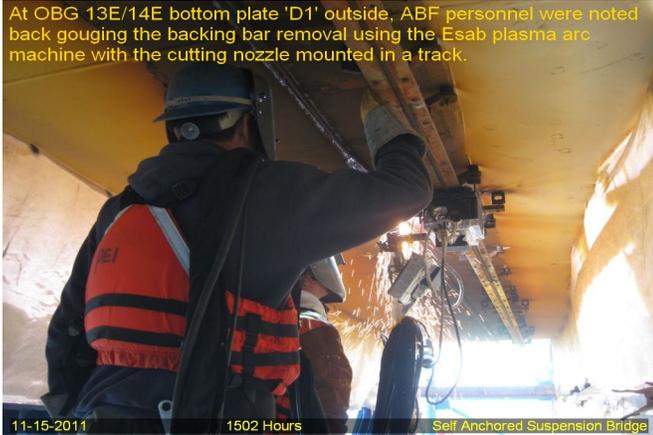
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- 2. 1 – 2 0 Acceptable
- 3. 2 – 3 0 Acceptable
- 4. 3 – 4 -1.5 Acceptable
- 5. 4 – 5 -2 Acceptable
- 6. 5 – 6 0 Acceptable



## 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

**Reviewed By:** Levell, Bill

QA Reviewer

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