

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-023225**Date Inspected:** 27-Apr-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**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:** 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 10E/11E side plate 'C2' (2640mm to 4577mm) 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 has 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) Fred Von Hoff was noted monitoring the welding parameters of the welder. During the shift, cover pass welding was completed and the welder has moved the welding equipment and accessories to side plate 'E' inside of the same OBG in preparation for the next welding task.

At OBG 10E/11E side plate 'C2' (4577mm to 5277mm) inside, QA randomly observed ABF/JV qualified welder Jorge Lopez perform root pass welding on the Complete Joint Penetration (CJP) splice butt joint where the track mounted Bug-o FCAW welder nozzle holder has limited access. 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) ABF-WPS-D15-1040B.

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The joint being welded has a single V-groove butt joint with steel backing bar. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder. At the end of the shift, root pass SMAW welding at location mentioned was still continuing and should remain tomorrow.

At OBG 7E-PP55-E3-#1 & 3 lifting lug access hole to top deck plate outside – ABF welder Jason Collins was observed 4G SMAW back welding fill pass to cover pass on the infill plate to top deck plate butt joints. The welder was noted using 1/8” diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1110A. Prior welding, ABF QC Fred Von Hoff was observed performing Magnetic Particle Testing (MT) on the back gouging and grinding of the butt joints. During welding, ABF QC Fred Von Hoff was noted monitoring the welder’s welding parameters. At the end of the shift, cover pass welding on the bottom side location of the two butt joints was still ongoing and should continue tomorrow.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT of the Complete Joint Penetration (CJP) welding of five (5) longitudinal stiffeners and four (4) corner transition joints. The QA verification was performed to verify that the welding and the VT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. OBG 6W/7W top deck plate ‘A’ to edge plate ‘B’ top corner transition inside - QA noted unacceptable surface profile. ABF to fix.
2. OBG 6W/7W edge plate ‘B’ to side plate ‘C’ bottom corner transition inside – QA VT verified
3. OBG 6W/7W top plate ‘A’ to edge plate ‘F’ top corner transition inside - QA VT verified
4. OBG 6W/7W edge plate ‘F’ to side plate ‘E’ bottom corner transition inside - QA VT verified
5. OBG 7W/8W top deck plate ‘A’ to edge plate ‘B’ top corner transition inside - QA noted unacceptable surface profile. ABF to fix.
6. OBG 7W/8W edge plate ‘B’ to side plate ‘C’ bottom corner transition inside – QA VT verified
7. OBG 7W/8W top plate ‘A’ to edge plate ‘F’ top corner transition inside - QA VT verified
8. OBG 7W/8W edge plate ‘F’ to side plate ‘E’ bottom corner transition inside - QA VT verified
9. OBG 8W/9W top deck plate ‘A’ to edge plate ‘B’ top corner transition inside – QA VT verified
10. OBG 8W/8W edge plate ‘B’ to side plate ‘C’ bottom corner transition inside – QA VT verified
11. OBG 8W/9W top plate ‘A’ to edge plate ‘F’ top corner transition inside - QA noted unacceptable surface profile. ABF to fix.
12. OBG 8W/9W edge plate ‘F’ to side plate ‘E’ bottom corner transition inside - QA VT verified
13. OBG 7E/8E top deck plate ‘A’ to edge plate ‘B’ top corner transition inside – QA VT/MT verified
14. OBG 7E/8E edge plate ‘B’ to side plate ‘C’ bottom corner transition inside – QA VT/MT verified
15. OBG 7E/8E top plate ‘A’ to edge plate ‘F’ top corner transition inside - QA VT/MT verified
16. OBG 7E/8E edge plate ‘F’ to side plate ‘E’ bottom corner transition inside - QA VT/MT verified

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At OBG 10E/11E side plate 'C2' inside, surface profile of the completed weld cover was noted.



At OBG 10E/11E side plate 'C2' (2640mm to 4577 mm) inside, ABF welder: Songtao, Huang was observed performing 3G Flux Cored Arc Welding (FCAW-G) welding cover pass on 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 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