

**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-026796**Date Inspected:** 01-Dec-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

|                                    |                                 |    |     |                                  |         |    |     |
|------------------------------------|---------------------------------|----|-----|----------------------------------|---------|----|-----|
| <b>CWI Name:</b>                   | Bernie Docena and Fred Von Hoff |    |     | <b>CWI Present:</b>              | Yes     | No |     |
| <b>Inspected CWI report:</b>       | Yes                             | No | N/A | <b>Rod Oven in Use:</b>          | Yes     | No | N/A |
| <b>Electrode to specification:</b> | Yes                             | No | N/A | <b>Weld Procedures Followed:</b> | Yes     | No | N/A |
| <b>Qualified Welders:</b>          | Yes                             | No | N/A | <b>Verified Joint Fit-up:</b>    | Yes     | No | N/A |
| <b>Approved Drawings:</b>          | Yes                             | No | N/A | <b>Approved WPS:</b>             | Yes     | No | N/A |
|                                    |                                 |    |     | <b>Delayed / Cancelled:</b>      | Yes     | No | N/A |
| <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 14E-PP125-E4-#2 lifting lug hole infill plate to top deck plate inside, ABF welder Erick Sparks was observed continuing to perform 1G Shielded Metal Arc Welding (SMAW) welding fill pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8" diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU for the Seismic Performance Critical Member (SPCM) butt joint. Prior welding, ABF QC Fred Von Hoff was noted checking the fit up of the butt joint and found it acceptable. This QA performed the fit up verification and noted same result. During welding, ABF QC Fred Von Hoff was noted monitoring the welder's welding parameters with measured working current of 126 amperes on the 1/8" diameter E7018H4R electrode. The welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, fill pass welding on the top side location of the butt joint was still continuing when the welder was pulled out and went to another work assignment leaving the work incomplete.

At OBG 13E/14E top deck plate A2.2 (870mm long) outside, QA randomly observed ABF/JV qualified welder Wai Kitlai was observed continuing to perform CJP groove (splice) back welding fill pass on the Seismic Performance Critical Member (SPCM) splice butt joint. The welder was observed perform manual welding in the 4G (overhead) 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-D15-3110-4. The joint being welded had a single V-groove butt joint with backing bar that has been

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back gouged and removed. The removal of the backing bar was also ground smooth and was tested using the Magnetic Particle Testing (MT) by ABF QC William Sherwood with positive result. The splice joint was preheated to greater than 150 degrees Fahrenheit using propylene gas torch prior welding. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder. Measured welding parameters at the time of welding were 260 amperes, 22.3 volts and travel speed of 170mm per minute with calculated heat input of 2.0Kjoules per mm which appears in compliance to the contract requirements. At the end of the shift, FCAW-G cover pass welding was completed.

At the other side of the longitudinal diaphragm of the same splice and OBG location 13E/14E top deck plate A2.2 (700mm long) outside, ABF welder Xiao Jian Wan was noted carbon air arc gouging the backing bar removal. The backing bar removal was ground smooth and was tested using MT by William Sherwood with positive result. The welder has started back welding the splice butt joint using the same process and implementing the same procedure as mentioned above. Measured welding parameters at the time of welding were 265 amperes, 24.4 volts and 180mm per minute travel speed with calculated heat input of 2.2Kjoules per mm which appears in compliance to the contract requirements. At the end of the shift, FCAW-G fill pass welding was still continuing and should remain tomorrow.

At OBG 13E/14E top deck plate 'A5' inside, QA randomly observed ABF/JV qualified welder Fred Kaddu perform carbon air arc gouging on the backing bar removal of the welded splice butt joint in preparation for the back welding. The carbon arc gouging on the backing bar removal has continued until the end of the shift.

This QA Inspector verbally informed QA SPCM Lead Inspector, Daniel Reyes, of the issues noted in this report for compliance therefore for further details of issues of significance see QA SPCM Lead Inspector, Daniel Reyes, Daily Inspection Report (6031) for this date.



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At OBG 13E/14E top deck plate 'A2.2' (870mm long) inside, ABF welder Wai Kitlai was observed performing 4G Flux Cored Arc Welding (FCAW-G) back welding fill pass on splice butt joint.



At 13E/14E top deck plate 'A2.2' (700mm long) inside, ABF welder Xiao Jian Wan was noted preheating the surface of the weld joint including the adjacent base metal prior 4G FCAW-G back welding.



## 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