**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Casey, William
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-027883
**Date Inspected:** 01-Jul-2012

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** American Bridge/Fluor Enterprises, a JV

**OSM Arrival Time:** 700
**OSM Departure Time:** 1530
**Location:** Job Site

**CWI Name:** William Sherwood and Steve Jensen

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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 Tower

**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-E2.1 top deck corner drop-in assembly plate from Y=0mm to Y=14300mm approximately between panel point PP111.1 to PP114 outside, QA randomly observed ABF certified welder James Zhen ID #6001 perform 1G (flat position) Submerged Arc Welding (SAW) on the 20mm thick plate splice butt joint. Welder James Zhen was noted utilizing F7A6-EM12K-H8, 3.2mm electrode with corresponding Esab OK Flux 10.62 flux and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1. The splice weld joint being welded had a single V-groove butt joint with steel backing bar. The plates were preheated to more than 150 °F using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and moving it the side during welding. ABF/QC Fred Michels was noted monitoring the welding parameters of welder James Zhen with measured working current of 552 amperes, 32 volts and travel speed of 380mm per minute. The calculated heat input on these parameters was 2.79 Kj/mm which appears in compliance to the contract requirements. QA noted the welding parameters, the workmanship and appearance of the completed fill deemed satisfactory. At the end of the shift, SAW cover pass welding at area mentioned above was completed.

At OBG 13W-PP123.5-W2.1-BF2 drop-in floor beam , QA randomly observed ABF certified welder Steve Davies perform 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding fill pass on the CJP flange to flange T-joint. The welder was utilizing 3.2mm diameter E7018H4R on the fill pass welding. The joint being welded has a single bevel 45 groove T-joint with copper backing bar that will be back gouged then back welded.

The 25mm thick flange plates were preheated to more than 150 degree Fahrenheit using propylene gas torch prior welding. Welding parameters were monitored by ABF/QC William Sherwood. QA noted the welding working parameter of 124 amperes on the 3.2 diameter E7018H4R electrode. The workmanship and appearance of the completed fill pass deemed satisfactory. During the shift, fill pass welding was still continuing and should remain tomorrow.

At OBG 12W-W2.1 top deck corner assembly drop-in plate Y=0mm to Y=5000mm outside , QA randomly observed ABF/JV qualified welder Richard Garcia perform 2F seal welding the top deck plates to the 48mm wide X 12mm thick steel backing bar. The welders were 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-F3200-2. The joint had a single V-groove butt joint design with the top deck plate being seal welded with to the backing bar. The plates with the backing bar were preheated to greater than 150 degrees propylene gas torch prior welding. During the shift, ABF QC Steve Jensen was noted monitoring welder Richard Garcia with measured welding parameters of 259 amperes and 23.5 volts. Welding parameters appear in compliance to the contract requirements. At the end of the shift, seal welding of the top deck plate to the backing bar was still continuing and should remain tomorrow.

At OBG 12W-W2.1 top deck corner assembly drop-in plate Y=5000mm to Y=10,000mm outside , QA randomly observed ABF/JV qualified welder Jeremy Dolman perform 2F seal welding the top deck plates to the 48mm wide X 12mm thick steel backing bar. The welders were 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-F3200-2. The joint had a single V-groove butt joint design with the top deck plate being seal welded with to the backing bar. The plates with the backing bar were preheated to greater than 150 degrees propylene gas torch prior welding. During the shift, ABF QC Steve Jensen was noted monitoring welder Richard Garcia with measured welding parameters of 265 amperes and 23.5 volts. Welding parameters appear in compliance to the contract requirements. At the end of the shift, seal welding of the top deck plate to the backing bar was still continuing and should remain tomorrow.


# WELDING INSPECTION REPORT

*( Continued Page 3 of 3 )*



**Summary of Conversations:**

No significant conversation ocurred 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.

| | | |
|---|---|---|
| **Inspected By:** | Lizardo,Joselito | Quality Assurance Inspector |
| **Reviewed By:** | Levell,Bill | QA Reviewer |