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

Bay Area Branch
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Contract #: 04-0120F4
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-028206
**Date Inspected:** 17-Aug-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:** 1930
**Location:** Job Site

**CWI Name:** John Pagliero

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|---|---|---|---|---|---|---|---|---|
| **Inspected CWI report:** | ☐ Yes | ☑ No | ☐ N/A | **CWI Present:** | ☑ Yes | ☐ No | | |
| **Electrode to specification:** | ☑ Yes | ☐ No | ☐ N/A | **Rod Oven in Use:** | ☑ Yes | ☐ No | ☐ N/A | |
| **Qualified Welders:** | ☑ Yes | ☐ No | ☐ N/A | **Weld Procedures Followed:** | ☑ Yes | ☐ No | ☐ N/A | |
| **Approved Drawings:** | ☑ Yes | ☐ No | ☐ N/A | **Verified Joint Fit-up:** | ☑ 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 13W-PP124-W2.2 BW1 and BF1 drop-in floor beam inside, ABF welder Lin E. Yun was observed continuing to perform repair welding. Prior to perform the repair, another welder was noted individually excavating the UT detected defects using carbon air arc gouging then ground smooth the groove of the excavation. ABF QC John Pagliero was noted performing the Magnetic Particle Testing (MT) on the defects removal with no relevant defects noted during the test. After the completion of the MT, welder Lin E. Yun was observed welding in the 3G (vertical)/4G (overhead) positions utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1004-Repairs on BW1 and ABF-WPS-D15-1001-Repairs respectively. The BW1 repair excavation was preheated to more than 225°F using propylene gas torch. The welder preheated the repair area to more than 325°F during welding then performed the Post Weld Heat Treatment (PWHT) of more than 450°F for one hour after welding as required. The other three (3) bottom flange (BF1) repairs were treated as normal repair. During the shift, ABF QV John Pagliero was noted monitoring the welder with measured working current of 123 amperes on the 3.2mm E7018H4R electrode. The following four (4) first time repairs were noted excavated and welded during the shift;

Y-location Length Width Depth Remarks
1. 80mm 50mm 25mm 7mm BW1 - completed.
2. 0mm 90mm 20mm 8mm BF1 - completed

3. 230mm 100mm 25mm 10mm BF1 – completed
4. 340mm 70mm 20mm 12mm BF1 - completed

At OBG 13W-PP123.5-W2.1 BW1 drop-in floor beam inside, ABF welder Gue Wu Chen was observed continuing to perform repair welding. Prior to perform the repair, another welder was noted individually excavating the UT detected defects using carbon air arc gouging then ground smooth the groove of the excavation. ABF QC John Pagliero was noted performing the Magnetic Particle Testing (MT) on the defects removal with no relevant defects noted during the test. After the completion of the MT, welder Gue Wu Chen was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1004-Repairs. The BW1 repair excavations were preheated to more than 225°F using propylene gas torch. The welder preheated the repair area to more than 325°F during welding then performed the Post Weld Heat Treatment (PWHT) of more than 450°F for one hour after welding as required. During the shift, ABF QV John Pagliero was noted monitoring the welder with measured working current of 123 amperes on the 3.2mm E7018H4R electrode. The following five (5) first time repairs were noted excavated and welded during the shift;

| | Y-location | Length | Width | Depth | Remarks |
|---|---|---|---|---|---|
| 1. | 90mm | 100mm | 15mm | 6mm | Completed. |
| 2. | 260mm | 40mm | 25mm | 7mm | Completed. |
| 3. | 300mm | 70mm | 20mm | 9mm | Completed. |
| 4. | 420mm | 60mm | 25mm | 9mm | Completed. |
| 5. | 500mm | 70mm | 20mm | 7mm | Completed. |

At OBG 13W-PP121-W2.4 BF1 drop-in floor beam inside, QA randomly observed ABF/JV qualified welder Richard Garcia perform cover pass welding on the Complete Joint Penetration (CJP) flange butt butt joint. This flange butt joint splice was previously welded but visually rejected by ABF QC due to underfill on the cover pass. The welder was observed manually welding in the 4G (overhead) position utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode. QA randomly monitored the welding parameter with measured working current of 130 amperes which appears in conformance to the contract requirements. Cover pass welding was completed during the shift.

At OBG 13W-PP122.5-W2.1 BF1 drop-in floor beam inside, QA randomly observed ABF/JV qualified welder Rick Clayborn continuing to perform CJP groove welding repair from location Y=0mm to Y=460mm (whole length of the flange). Prior welding, the welder was noted excavating the repair using carbon air arc gouging and after its completion, the groove of the excavation was ground smooth by the same welder and then MT'd by ABF QC John Pagliero. The welder was observed welding in the 1G (flat) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repairs. During the shift, ABF QC Barry Drake was noted monitoring the welder with measured working current of 130 amperes on 3.2mm E7018H4R electrode. At the end of the shift, repair welding at location mentioned above was still continuing and should remain tomorrow.

# WELDING INSPECTION REPORT

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**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.

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