

**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-027080**Date Inspected:** 18-Jan-2012**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:** Jobsite

|                                    |                |    |     |
|------------------------------------|----------------|----|-----|
| <b>CWI Name:</b>                   | As noted below |    |     |
| <b>Inspected CWI report:</b>       | Yes            | No | N/A |
| <b>Electrode to specification:</b> | Yes            | No | N/A |
| <b>Qualified Welders:</b>          | Yes            | No | N/A |
| <b>Approved Drawings:</b>          | Yes            | No | N/A |

|                                  |     |    |     |
|----------------------------------|-----|----|-----|
| <b>CWI Present:</b>              | Yes | No |     |
| <b>Rod Oven in Use:</b>          | Yes | No | N/A |
| <b>Weld Procedures Followed:</b> | Yes | No | N/A |
| <b>Verified Joint Fit-up:</b>    | Yes | No | N/A |
| <b>Approved WPS:</b>             | Yes | No | N/A |
| <b>Delayed / Cancelled:</b>      | Yes | No | N/A |

**Bridge No:** 34-0006**Component:** SAS OBG**Summary of Items Observed:**

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

## 13E/PP119.5/E4 Lifting Lug Hole W2 (Exterior)

This QA Inspector made random observations of ABF welder Jorge Lopez (ID 6149) performing the Shielded Metal Arc Welding (SMAW) process in the 1G flat position on lifting lug hole W2 at 13E/PP119.5/E4. This QA Inspector observed QC Inspector Fred Von Hoff measure the pre-heat temperature to verify a minimum of 93.3°C was achieved. This QA Inspector also observed the QC Inspector monitoring the welding and verifying that the parameters were in compliance pertaining to ABF-WPS-D15-1050A-CU. The parameters were recorded as (Amperes=230) utilizing a 4.0 mm E7018-H4R electrode. During in process welding, this QA Inspector noted that the QC Inspector measured the inter-pass temperatures to maintain a heat range below 230°C. This QA Inspector made subsequent observations during the shift and noted that the work was completed on this date and appeared to be in general conformance to the contract specifications.

## 13E/PP119.5/E3 Lifting lug hole W1 (Exterior)

This QA Inspector observed QC Inspector Fred Von Hoff utilize a Bridge Cam Gage to measure the fit-up of the 20 mm plate in the B-U4a joint on lifting lug hole W1 at 13E/PP119.5/E3. This QA Inspector verified the fit-up as acceptable and employed a 93°C Tempilstik to ensure the minimum pre-heat temperature had been

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achieved. This QA Inspector randomly observed ABF welder Salvador Sandoval performing the SMAW process in the (1G) flat position and observed the QC Inspector verify the welding parameters were in accordance with ABF-WPS-D15-1050A-CU. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was completed on this date and appeared to be in general compliance with the approved WPS and the contract specifications.

### 12E/13E/E1/E2 R2 (Exterior)

This QA Inspector randomly observed ABF welder Wai Kit Lai (Welder ID 2953) performing the repair welding operation of three (3) rejectable ultrasonic indications as per the SMAW process in the (4G) overhead position on "E1/E2" at 12E/13E on the exterior of the OBG. The dimensions of the excavations were recorded as; y + 1800 (100mm's in length, 30mm's in width and 12mm's in depth), y + 2470 (110mm's in length, 40mm's in width and 16mm's in depth), y + 3370 (140mm's in length, 20mm's in width and 20mm's in depth), y + 2970 (100mm's in length, 15mm's in width and 10mm's in depth). This QA Inspector observed QC Inspector John Pagliero perform a Magnetic Particle Inspection (MT) of the excavations to determine the soundness of the metal. This QA Inspector noted that Mr. Pagliero found no rejectable indications. This QA Inspector observed the QC Inspector monitor the welding and the parameters to ensure compliance with the approved welding procedure. The welding parameters observed at this location appeared to be in general compliance with approved WPS and the contract specifications and this QA Inspector noted that the work is in process.

### 12E/13E/D2 (Interior)

This QA Inspector randomly observed QC Inspector Mr. John Pagliero perform a R2 ultrasonic inspection of the repaired area on OBG bottom plate section 12W/13W at weld location D2. This QA Inspector observed that Mr. Pagliero detected three (3) rejectable ultrasonic indications at "Y" location 1400 mm (depth/18mm, length/140mm), "Y" 4700 (depth/31mm, length/40mm) and "Y" 5000 (depth/30mm, length/230mm). The bottom plate section is 30 mm to 35 mm thick.

### 12E/13E/E1 Repair (Interior)

This QA Inspector randomly observed ABF welder Wai Kit Lai performing the back-gouge operation of an ultrasonic rejectable indication on "E1" of 12E/13E on the interior of the OBG located at "Y" 1040 mm: (20 mm wide; 75 mm length; and 15 mm in depth). This QA Inspector observed QC Inspector Fred Von Hoff perform a Magnetic Particle Inspection (MT) of the excavation to determine the soundness of the metal. Upon completion of the testing this QA Inspector verified that no rejectable indications were present.

This QA Inspector randomly observed ABF welder Wai Kit Lai (Welder ID 2953) performing the repair welding operation of an ultrasonic indication as per the SMAW process in the (1G) flat position on "E1" at 12E/13E on the interior of the OBG. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector Fred Von Hoff verify that the preheat temperature was at the minimum of 93 degrees C and that the welding parameters (Amps=135) were in accordance with WPS D1.5-1001- Repair. The welding parameters observed at this location appeared to be in general compliance with approved WPS and the contract specifications.

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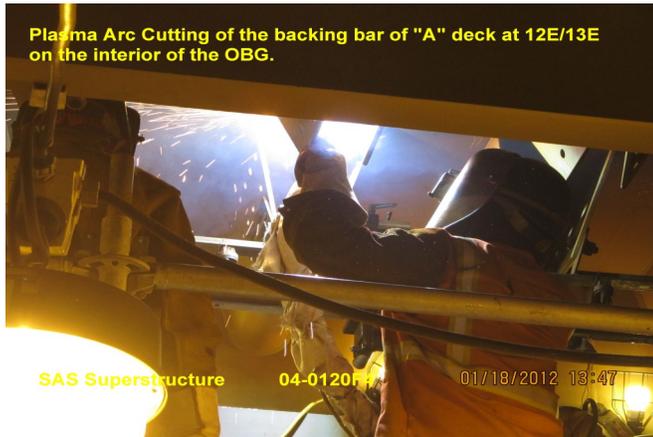
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Note: The QAI reviewed the observations and inspection with QA Lead Inspector, Daniel Reyes, written in this report. The issues were noted by the QAI and the QA Lead Inspector concurs with the QA report.

## Summary of Conversations:

The were no pertinent conversations to report.



## 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 Nina Choy 510-385-5910 , who represents the Office of Structural Materials for your project.

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| <b>Inspected By:</b> | Frey,Doug   | Quality Assurance Inspector |
| <b>Reviewed By:</b>  | Levell,Bill | QA Reviewer                 |

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