

**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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026772**Date Inspected:** 29-Nov-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:** Jobsite**CWI Name:** As noted below**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 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:

1. 13E/14E/F (Exterior)
2. 13W/14W/I (Interior)
3. 14W/PP127.2/W1 Vent Hole (Exterior)
4. 13E/14E/D/2 (Exterior)

Orthotropic Box Girder (OBG) section: The QC Documents observed being used by this QA Inspector for the following weld joints appeared to be designated as Seismic Performance Critical Members (SPCM).

1. 13E/14E/F (Exterior)

This QA Inspector made random observations of ABF welder Fred Kaddu performing back gouge operations on the exterior splice plate "F" at 13E/14E. This QA Inspector observed QC Inspector Fred Von Hoff perform Magnetic Particle Testing to ensure metal soundness. Upon the QC Inspector's acceptance of the joint inspection, this QA Inspector observed the ABF welder perform Shielded Metal Arc Welding (SMAW) in the (3G) vertical position utilizing E7018-H4R electrodes. This QA Inspector observed the QC Inspector monitoring the welding and verifying that the parameters were in compliance pertaining to ABF-WPS-D15-1110A-Revision 1. The parameters were recorded as (Amperes=125). During in process welding, this QA Inspector noted that the QC

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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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 in progress and appeared to be in general conformance to the contract specifications.

### 2. 13W/14W/I (Interior)

This QA Inspector randomly observed QC Inspector William Sherwood measure the pre-heat temperature of the B-U2a-GF Complete Joint Penetration (CJP) weld on splice plate "I" on the interior of 13W/14W. This QA Inspector observed ABF welder Richard Garcia (ID 5892) perform the Flux Core Arc Welding with Gas (FCAW-G) process in the (3G) vertical position. This QA Inspector observed the QC Inspector monitor the welding and the parameters to ensure conformance with ABF-WPS-D15-3110-3. This QA Inspector made periodic observations to monitor quality and noted that the work was in progress and appeared to be in general conformance with the contract specifications.

### 3. 14W/PP127.2/W1 Vent Hole (Exterior)

This QA Inspector made random observations of ABF welder Mike Jimenez (ID 4671) perform the SMAW process in the 1G flat position on Vent Hole (VH) 14W/PP127.2/W1. This QA Inspector observed QC Inspector Sal Merino measure the pre-heat temperature to verify a minimum of 10°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=282) 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.

### 4. 13E/14E/D/2 (Exterior)

This QA Inspector randomly observed ABF welding operator James Zhen (ID 6001) performing the Flux Core Arc Welding with gas (FCAW-G) process utilizing a "Bug-O" motorized rail system with a magnetic base attached in the (4G) overhead position on the underside of bottom plate "D", at 13E/14E of the OBG. This QA Inspector observed QC Inspector Fred Von Hoff monitoring the welding to ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-3040A-1.

The parameters were recorded as (A=265/V=24.7/TS=170/HI=2.3). This QA inspector made subsequent observations throughout the shift to monitor quality and noted that the work is in progress and appears to be in general conformance to the contract requirements.

This QA Inspector performed Ultrasonic Testing (UT) on a 20 mm vent hole plate on weld section E2.9 at 14E/PP126.7. This QA Inspector utilized a G.E. USN 60 and performed the testing using a 70 degree shear-wave transducer from both sides of the weld joint. The techniques utilized for scanning to determine a defect and sizing (length) were performed to comply with the contract documents. No rejectable indications were noted.

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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Note: The QAI reviewed the observations and inspection with QA Lead Inspector, Daniel Reyes, written in this report. No 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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**Inspected By:** Frey,Doug

Quality Assurance Inspector

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**Reviewed By:** Levell,Bill

QA Reviewer