

**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-026843**Date Inspected:** 08-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:** 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
<b>Component:</b>	SAS OBG		

**Bridge No:** 34-0006**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. FW Spencer Tower (Exterior)
2. 14W/PP125/W4 Lifting Lug Hole W3 (Interior)
3. 11W/PP104/W3 Lifting Lug Hole W1 (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. FW Spencer Tower (Exterior)

The QA inspector observed F.W. Spencer welder Damian LLanos (ID 6645) performing Shielded Metal Arc Welding (SMAW) in the (2G) horizontal position on 2" schedule 80 domestic water pipe located at the 56 m elevation on the exterior of the south shaft weld #19/2T/56. The QA inspector verified the fit up of the joint and found it to be satisfactory. The QA inspector observed QC inspector Steve Jensen monitoring the welding to ensure the welding parameters were in compliance pertaining to WPS-1-12-1 Revision 2 (1.12). The welder was observed implementing 6010 electrodes in the root pass with the balance using 7018 electrodes. The QA inspector made subsequent observations throughout the shift to monitor quality and noted that the work appears to be in general conformance with the contract documents.

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### 2. 14W/PP125/W4 Lifting Lug Hole W3 (Interior)

This QA Inspector randomly observed ABF welder Salvador Sandoval (Welder ID 2202) performing the Shielded Metal Arc Welding (SMAW) process in the (4G) overhead position on “A” deck lifting lug hole 14W/PP125/W4/W3. This QA Inspector observed QC Inspector Sal Merino verify that the pre-heat temperature was at a minimum of 150 degrees F and that the welding parameters were in accordance with ABF-WPS-D1. 5-1110A-Revision 1. 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 contract specifications.

### 14W/PP125/W4 Lifting Lug Hole W4 (Interior)

This QA Inspector randomly observed ABF Quality Control Inspector Sal Merino performing Magnetic Particle (MT) inspection on the back gouge of face “B” of lifting lug hole 14W/PP125/W4/W4 located on the interior of the OBG. This QA Inspector verified that the weld was free of indications and found to be satisfactory. This QA Inspector observed the QC Inspector measure the pre-heat the joint to a minimum of 150 degrees F and this QA Inspector noted the utilization of E9018-H4R electrodes with Amperage of 133. This QA Inspector randomly observed ABF welder Salvador Sandoval perform the SMAW process in the (4G) overhead position and 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.

### 14W/PP125.2/W5 Vent Hole (Interior)

This QA Inspector randomly observed ABF welder Mike Jimenez performing the back-gouge operation on the interior of “A” deck Vent Hole 14W/PP125.2/W5. This QA Inspector observed QC Inspector Sal Merino perform a Magnetic Particle Inspection (MT) of the back gouge 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 made random observations of ABF welder Jorge Lopez (ID 6149) perform the Shielded Metal Arc Welding process (SMAW) in the (4G) overhead position. This QA Inspector observed QC Inspector Sal Merino measure the pre-heat temperature to verify a minimum of 150°F 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-D15-1110A-Revision 1. The parameters were recorded as (Amperes=120) utilizing a 3.2 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.

### 3. 11W/PP104/W3 Lifting Lug Hole W1 (Exterior)

This QA Inspector observed QC Inspector Sal Merino utilize a Bridge Cam Gage to measure the fit-up of the 20 mm plate in the B-U-4a joint on lifting lug hole 11W/PP104/W3/W1. This QA Inspector verified the fit-up as acceptable and employed a 65°C Tempilstik to ensure the minimum pre-heat temperature had been achieved. This QA Inspector randomly observed ABF welder Mike Jimenez (welder ID 4671) performing the Shielded Metal Arc

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Welding (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 in progress and appeared to be in general compliance with the approved WPS and the contract specifications.

### 14W/PP126.7/W5 Vent Hole Repair (Interior)

This QA Inspector randomly observed ABF welder Jorge Lopez performing the back-gouge operation of an ultrasonic rejectable indication on "A" deck Lifting Lug Hole 14W/PP126.7/W5. The dimensions of the completed excavation were: "Y" 160 mm: (20 mm wide; 80 mm length; and 10 mm in depth). This QA Inspector observed QC Inspector Sal Merino 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 Jorge Lopez (Welder ID 6149) performing the repair welding operation of one (1) ultrasonic indication as pertaining to the Shielded Metal Arc Welding (SMAW) process in the (4G) overhead position on "A" deck vent hole 14W/PP126.7/W5. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector Sal Merino verify that the preheat temperature was at the minimum of 150 degrees F and that the welding parameters (Amps=135) were in accordance with WPS D1. 5-1004- Repair. The welding parameters observed at this location appeared to be in general compliance with approved WPS and the contract specifications. Upon completion of the repair, a thermal induction blanket was placed over the area for Post Weld Heat Treatment (PWHT) at 450 degrees F for 1 hour.

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.



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### 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
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<b>Reviewed By:</b>	Levell,Bill	QA Reviewer
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