

**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 #: 04-0120F4Cty: 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-027129  
**Date Inspected:** 02-Feb-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:** 1730  
**Location:** Jobsite

<b>CWI Name:</b>	As noted below	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes No N/A	
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes No N/A	
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes No N/A	
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes No N/A	
		<b>Delayed / Cancelled:</b>	Yes No N/A	
<b>Bridge No:</b>	34-0006	<b>Component:</b>	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/PP121.5/E3 Lifting Lug Hole #3 (Exterior)

This QA Inspector observed the welder grind and blend the edges of the hole utilizing a small disc grinder and installed the 20 mm plate to make up the B-U4a joint. This QA Inspector observed QC Inspector Fred Von Hoff measure the planar offset to be within 1 mm and this QA Inspector found it to be acceptable. This QA Inspector made random observations of ABF welding personnel Salvador Sandoval (ID#2202) performing the Shielded Metal Arc Welding process (SMAW) in the (1G) flat position on Lifting Lug Hole (LLH) #3 at 13E/PP121.5/E3. This QA Inspector observed the QC Inspector 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-D15-1050A-CU. The parameters were recorded as (Amperes=195) 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. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work on the exterior side of LLH #3 was completed on this date and appeared to be in general conformance with the contract documents. This joint is a Seismic Performance Critical Member.

## 12E/13E/A4 QC NDT (Exterior)

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This QA Inspector randomly observed QC Inspector Jesse Cayabyab perform a Magnetic Particle (MT) inspection of the weld area from 0mm-4500mm on “A4” on 12E/13E on the exterior of the OBG. This QA Inspector observed that Mr. Cayabyab found no rejectable indications and the work appeared to be in general conformance with the contract specifications.

This QA Inspector randomly observed ABF Quality Control Inspector Mr. Jesse Cayabyab performing Ultrasonic Testing (UT) inspection on “A4” at 12E/13E on the exterior of the OBG. This QA Inspector observed that Mr. Cayabyab detected no rejectable ultrasonic indications. The weld area scanned was from 0mm-4500mm and was 20mm thick.

### 12E/13E/A4 QA NDT (Exterior)

This QA Inspector performed a Magnetic Particle (MT) Inspection at the locations listed below. This QA Inspector performed the yoke method in conformance with ASTM E 709 and the standard of acceptance with D1.5 section 6.26. This QA Inspector noted that no rejectable indications were found at the time of testing. This QA Inspector generated a TL-6028 MT report on this date. The completed work at this location appeared to be in general conformance with the contract specifications.

12E/13E/A4 from 0mm-3450mm  
13E/14E/A5 from 2620mm-4840mm (SPCM)

This QA Inspector performed Ultrasonic Testing (UT) on approximately 10% of the welds located at the locations listed above. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA observed no rejectable indications at the time of testing. This QA generated a TL-6027 UT report on this date. The completed work observed at this location appeared to be in compliance with the contract specifications.

### 13E/14E/A5 QC UT (Exterior)

This QA Inspector randomly observed QC Inspector Mr. John Pagliero perform an ultrasonic inspection of “A5” at 13E/14E on the exterior of the OBG. This QA Inspector observed that Mr. Pagliero detected a rejectable ultrasonic indication. The location for the indication was as follows; y+1740; 50mm’s in length, 11mm’s deep at +2db’s. The “A” deck plate section at this location is 20 mm thick. This joint is a Seismic Performance Critical member (SPCM).

### 13E/14E/A5 Repair (Exterior)

This QA Inspector randomly observed ABF welder Xiao Jian Wan (ID 9677) performing the back-gouge operation of an ultrasonic rejectable indication on “A5” at 13E/14E located at y+1740; 100 mm in length, 25mm wide and 13mm deep. 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.

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This QA Inspector randomly observed ABF welder Xiao Jian Wan performing the repair welding operation of an ultrasonic indication as per the Shielded Metal Arc Welding (SMAW) process in the (4G) overhead position on "A5" at 13E/14E on the exterior 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 66 degrees C 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. This joint is a seismic Performance Critical Member (SPCM).

### 12E/13E/A5 QC UT (Exterior)

This QA Inspector randomly observed QC Inspector Mr. Bernie Docena perform an ultrasonic inspection of "A5" at 12E/13E on the exterior of the OBG. This QA Inspector observed that Mr. Docena detected three (3) rejectable ultrasonic indications located at y+3730; 40mm's in length, 6mm's deep at +10db's, y+4150; 60mm's in length, 17mm's deep at +8db's and y+4800; 50mm's in length, 8mm's deep at +2db's. The "A" deck plate section at this location is 20 mm thick.

### 13E/PP121.5/E3 Lifting Lug Hole #4 (Exterior)

This QA Inspector randomly observed ABF welder Salvador Sandoval pre-heat the complete joint penetration (CJP) weld prior to performing SMAW on lifting lug hole #4 at 13E/PP121.5/E3. This QA Inspector observed QC Inspector Fred Von Hoff verify that the temperature was at a minimum of 66° C and the amperage for the 3.4mm E7018-H4R electrodes was 125. The welder made a few more passes to complete the work and employed a small disc grinder to blend the reinforcement to a near flush condition. Upon completion of #4 the welder made preparations to relocate to #3 of 13E/PP121.5/E4. This LLH was previously started by another welder on or about 1/25/2012. This QA Inspector randomly observed ABF welder Salvador Sandoval pre-heat the joint and the QA Inspector employed a 66°C Tempilstik to ensure the minimum pre-heat temperature had been achieved. This QA Inspector randomly observed the welder 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. This joint is a Seismic Performance Critical Member.

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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**Inspected By:** Frey,Doug

Quality Assurance Inspector

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**Reviewed By:** Levell,Bill

QA Reviewer