

**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-027087  
**Date Inspected:** 19-Jan-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:** Job Site

<b>CWI Name:</b>	See 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>	OBG	

**Summary of Items Observed:**

At the start of the shift this Quality Assurance Lead Inspector (QAI) traveled to the SAS project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) Quality Control (QC) personnel. The observations and inspections were performed as noted below:

A). This Quality Assurance Lead Inspector (QALI) assigned the QA Inspectors to the following, but not limited to the work station(s) listed, to observe the welding and the QC inspection of the following:

Doug Frey-OBG E13 (Observation of welding and QC inspection on the lifting lug holes), OBG field splice E12/E13 (Observation of repair welding and QC inspection of the bottom plate splice identified as "D2") and Tower, Elev. 53 Meter (Observation of welding and QC inspection of equipment base plates).

Ken Riley-OBG W12 (Observation of repair welding and QC inspection of lifting lug holes), OBG Field Splice W12/W13 (Observation of repair welding and QC inspection of the bottom plate splice identified as "D3" and the deck plate welding at "A5") and submittal reviews.

Skyway-No Work

NOTE: See QA daily Weld Inspection Reports (WIR) and NDE reports for additional information and details.

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## Quality Assurance Lead Inspector (QALI) Summary

This QA Lead Inspector (QALI) observed the QA Inspector's Douglas Frey and Ken Riley monitor the work performed by the QC inspectors at random intervals and also observed the QA Inspectors verify the welding parameters, the minimum preheat and the maximum interpass temperatures for compliance with the contract specifications. The QAI's utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. At the conclusion of the shift, this QA Lead Inspector discussed and reviewed the work performed by the QAI's in regards to the various observations and the verifications of the WPS's, consumables, welding parameters, preheat and interpass temperatures. The QAI observations of the QC inspection and verification of the welding parameters performed on this date appeared to comply with the contract specifications and no issues was noted on this date. This QALI also verified the following in progress work:

The QA verification of the above items appeared to comply with the contract specifications.

### OBG W12, Lifting Lug Holes (Face "A")

The QAI observed the Shielded Metal Arc Welding (SMAW) of the lifting lug hole insert plate identified as Weld Number (WN): 13W-PP119.5-W4, W1 through W4 of the Orthotropic Box Girder (OBG) "A" deck identified as W13. The welder, Mike Jiminez ID # 4671, performed the welding of the Complete Joint Penetration (CJP) groove weld utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU, Rev. 0. The WPS was also utilized by the QC inspector Sal Merino as a reference to monitor the welding and verify the welding parameters which was recorded as 276 amps by the QC inspector. The 4.8 mm Lincoln electrode was utilized with the welding performed in the flat (1G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the upper side. The groove joint appeared to comply with the AWS joint designation identified as B-U4a. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were also monitored by the QC inspector. This QA also observed the QC inspector inspect the fit-up of the insert plate to the deck plate. The welding and QC inspection appeared to comply with the contract specifications.

This QAI also observed the welder, Rick Clayborn ID # 2773, perform the back gouging of the lifting lug hole identified as 12W-PP115-W4, W3 located at the OBG W12. The welding was performed utilizing the SMAW process and the 3.2 mm electrode as per the WPS identified as ABF-WPS-D15-1110A, Rev. 1. The WPS was also utilized by the QC inspector Sal Merino as a reference to monitor the welding and verify the welding parameters which was recorded as 133 amps by the QC inspector. The welding was performed in the overhead (4G) position with the work positioned in an approximately horizontal plane and the weld metal deposited from the underside. The surface temperatures, minimum preheat and maximum interpass, appeared to comply with the contract specifications.

### OBG Field Splice W12/W13

The QAI observed the welder, Fred Kaddu ID # 2188 perform the repair welding of the areas marked as UT rejects on the Complete Joint Penetration (CJP) groove weld identified as WN: 12W-13W-D3 . The repair welding was

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performed utilizing the Shielded Metal Arc Welding (SMAW) process and the 4.0 mm electrode as per the Welding Procedure Specification (WPS) identified as ABF-WPS-1001 Repair Rev. 0. The WPS was also used by the QC inspector, Sal Merino, as a reference to monitor and to perform the in progress production welding. The welding parameters were noted as 176 amps. The welding was performed in the flat position (1G) with the work positioned approximately in a horizontal plane and the weld metal to be deposited from the upper side.

### FW Spencer/Pipe Welding of Utility Systems

This QALI observed the fit-up and CJP welding of the pipe 2.0" and 1.0" weld-o-lets to the 2.5" and 4" utility service systems. The welding was performed by FW Spencer personnel Damian LLanos, identification # 6645, utilizing the WPS identified as 1-12-1 and this WPS was also utilized as a reference by the QC Inspector, Steve Jensen. The average amperage reading was noted as 87 amps. The work performed on this date was located at the west OBG W1 through W7 along grid line W2 between PP20 and PP28. Mr. Jensen requested QA verification of the following pipe welds:

WATER SYSTEM	COMPRESSED AIR SYSTEM
1/DW1/20/NW	1/CA/20/NW
1/DW1/22/NW	1/CA/12/NW
1/DW1/24/NW	1/CA/24/NW
1/DW1/26/NW	1/CA/26/NW
1/DW1/28/NW	1/CA/28/NW

The QA verification of the above items appeared to comply with the contract specifications.

The in process welding and the inspection performed by the QC inspector, Mr. Jensen, appeared to comply with the contract specifications.

QALI NOTE: Due to inclement weather (rain) the following work was suspended at approximately 1300:

Pipe Welding (FW Spencer)

Lifting Lug Holes

### QA Summary

The QC inspection and welding performed on the lifting lug holes, repair welding and pipe welding was observed at random intervals by this QA Inspector. The QAI observations included verification of the welding parameters, the minimum preheat and the maximum interpass temperatures for compliance with the contract specifications. This QAI utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The random observations, verifications of the welding and QC inspection, WPS's, consumables, welding parameters, preheat and interpass temperatures appeared to comply with the contract specifications.

This QA Inspector continued the daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders (OBG, Longitudinal and Transverse "A" Deck Stiffeners, Deck Access Holes and the Tower Shear plates).

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## Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection personnel scheduled for this shift.

## 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>	Reyes,Danny	Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell,Bill	QA Reviewer
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