

**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-027815  
**Date Inspected:** 24-Jun-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:** 1530  
**Location:** Job Site

<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:

## OBG 13East

This QA Inspector at random intervals observed the in process Shielded Metal Arc Welding (SMAW) in the 4G overhead position by ABF/JV certified welder Richard Garcia #5892 using E9018-H4R electrodes drawing amperage of 127 on the Deck Stiffener Flange (DSF) of 13E/14E-LS-2 on the interior of the OBG. The welder was observed grinding and blending the work between passes using a small disc grinder while Quality Control (QC) Inspector Fred Michels measured the inter-pass temperatures by employing an infrared temperature gauge as well as monitoring the parameters in accordance with ABF-WPS-D1.5-1162-4. Prior to the commencement of welding, QC verified the pre-heat temperature provided by thermal heat blankets of the ProHeat 35 system. Work on this weld location was initiated on 6/22/2012 and was completed on this date. The thermal blankets were placed over the completed weld surface for a period of one hour at 450 to 650°F for the required Post Weld Heat treatment (PWHT). On a subsequent observation to monitor quality it was noted that the welder had applied the blankets to Longitudinal 1 (LS-1) and commenced tacking the DSF into place. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work at LS-1 is in progress and appeared to be in general conformance with the contract documents.

This QA Inspector randomly observed ABF/JV qualified welder Edward Brown #9331 continue the in process

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repair welding of the Beam Flange at 13E PP122.5-E2.1-BF1 on the interior of the OBG. The work was initiated on 6/23/2012 and reference for this repair is Request for Weld Repair (RWR) 201206-039 and ABF-WPS-D1.5-1004-Repair. This QA Inspector observed QC Inspector Fred Michels verify prior to the start of welding operations, that the minimum preheat temperature as per the approved WPS was established; and afterwards verified that the welding parameters (Amps) were in accordance with the approved WPS. The welder was observed grinding and blending the start/stop edges of the work utilizing a small disc grinder and compressed air in between passes. This QA Inspector noted that the 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observations no issues were noted by the QA. The work was completed on this date and appeared to be in general conformance with the contract documents.

This QA Inspector randomly observed ABF/JV qualified welder Steven Davis #7889 performing SMAW using 3.2mm" diameter E7018-H4R electrodes and implementing Caltrans approved WPS ABF-WPS-D1.5-1080-Revision 1. The joint being welded was 13E PP124-E2.2-BR1 a complete Joint Penetration (CJP) welded in the 3G Vertical and 4G Overhead positions. During welding, ABF QC Fred Michels was noted as monitoring the welding parameters. Welding parameters were recorded as A=125. Upon completion of the back gouge QC performed Magnetic Particle (MT) Inspection of the site to ensure soundness of the metal. This QA Inspector noted that QC found no relevant indications. On a subsequent observation this QA Inspector noted that between passes the welder was cleaning the work using a small disc grinder as QC measured the inter-pass temperatures with Tempilstik Heat Indicators. At the time of the observations no issues were noted by this QA Inspector. On subsequent observations to monitor quality, it was noted that the work was completed and appeared to be in general conformance with the contract documents.

### 5E PP29.5 E2-DAH (Exterior)

This QA Inspector made random observations of SMAW on the root joint of the Deck Access Hole (DAH) at 5E PP29.5 E2-DAH on the exterior of the OBG. ABF/JV qualified welder Todd Jackson #4639 was observed welding in the 1G flat position using 3.2mm" diameter E7018-H4R electrodes. This QA Inspector observed QC Inspector Steve Jensen verify prior to the start of welding operations, that the minimum preheat temperature as per the approved WPS was established; and afterwards verified that the welding parameters (Amps and Travel Speed) were in accordance with ABF-WPS-D1.5-1010-Revision 1. The welder was observed grinding and blending the start/stop edges of the work utilizing a small disc grinder and compressed air in between passes. This QA Inspector noted that the 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observations no issues were noted by the QA. On subsequent observations throughout the shift to monitor quality, it was noted that the work was in progress and appeared to be in general conformance with the contract documents.

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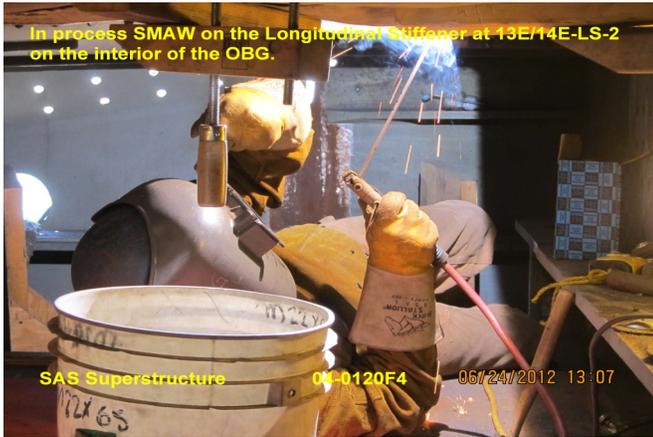
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## Summary of Conversations:

Conversations were relevant to welding performed and information unique with each location.



## 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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