

**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-028279**Date Inspected:** 27-Aug-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** jobsite**CWI Name:** Pat Swain**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:** OBG**Summary of Items Observed:**

Quality Assurance inspector (QA) Matthew Daggett was at the American Bridge/Fluor (ABF) job site at the San Francisco/Oakland Bay Bridge 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. Weld Repair 12/13W-C1 Y=1090

2. Weld Repair of grinding divots 12W-PP111.1-C1

Weld Repair 12/13W-C1 (Repair #201208-093)

The QA inspector witnessed critical weld repair being performed by ABF welding personnel Rick Clayborn on Splice 12/13W-C1, repair #201208-093, at the following location:

Y= 1090mm, D=11mm, W=40mm, L=650mm

This QA Inspector observed Mr. Clayborn preheating to a QA verified temperature of 250F prior to using the Carbon Arc Gouging process to remove defects at the above-mentioned locations on the Splice. The locations and depth of the defects had been marked on the steel by the Ultrasonic Technician at the conclusion of his testing. At the end of gouging operations Mr. Clayborn ground the excavations to a bright clean metal condition in preparation of Visual and Magnetic Particle Testing.

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# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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Prior to welding Quality Control Technician Pat Swain performed Visual and Magnetic Particle Testing on the above excavations. This Quality Assurance Inspector verified the results of the test by doing duplicate testing to the excavations. No indications were noted.

The welder spent the majority of the shift depositing the root passes, fill passes, and cap passes with approximately 100% being completed at the end of the shift. QC inspector Pat Swain was noted to be present in order to monitor the progress and ensure the welding was within the established Welding Procedure Specification (WPS) noted as ABF-WPS-D15-1004R and supporting Procedure Qualification Records (PQR). Prior to initiating the welding at this location the QC inspector observed the preheat temperature using a Raytek non-contact Thermometer, was sufficient and compliant to the above-mentioned WPS. Using a Tempil Stick, (temperature indicating crayon) the preheat was then verified by this QA inspector to be greater than 350F. The parameters, using a Fluke brand Tong style meter, were verified to be 162 amps.

At the conclusion of welding operations Welder Clayborn neglected to post heat per the Requirements of AWS D1.5-02 and the above-mentioned WPS. This QAI promptly reported the Non-Compliance to QC Inspector Pat Swain and issued an Incident Report. No corrective action has been taken at the time of this report.

The QA inspector monitored the critical weld repair being performed by ABF welding personnel Rick Clayborn on grinding divots of Splice 12W PP111.1 C1. The divots were at various locations along the splice.

The welder spent the majority of time depositing the root passes, fill passes, and cap passes with approximately 100% being completed at the end of the shift. QC inspector Pat Swain was noted to be present in order to monitor the progress and ensure the welding was within the established Welding Procedure Specification (WPS) noted as ABF-WPS-D15-1004R and supporting Procedure Qualification Records (PQR). Prior to initiating the welding at this location the QC inspector observed the preheat temperature and using a Raytek non-contact Thermometer, was sufficient and compliant to the above-mentioned WPS. Using a Tempil Stick, (temperature indicating crayon) the preheat, temperature was then verified by this QA inspector to be greater than 350F. The parameters, using a Fluke brand Tong style meter, were verified to be 160 amps. At the conclusion of welding operations Mr Clayburn post heated at a QC recorded QA verified temperature of 450F for one hour.



## Summary of Conversations:

There were general conversations with Quality Control Inspector Chris Concha, at the start of the shift regarding the location of welding, inspection personnel scheduled for this shift. All observations were relayed to Danny Reyes and Bill Levell.

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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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> | Daggett, Matt | Quality Assurance Inspector |
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| <b>Reviewed By:</b> | Levell, Bill | QA Reviewer |
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