

**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 #: 78.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-030090**Date Inspected:** 02-Oct-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** Steward Machine Co.**Location:** Birmingham, AL**CWI Name:** Fred Hudson**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:** E2 Shear Key Anchorages**Summary of Items Observed:**

Quality Assurance Inspector (QAI) Fritz Belford was present on the date and times noted above in order to observe the fabrication and Quality Control (QC) functions performed by Steward Machine Company for the E2 Shear Key Anchorages for the SFOBB project. Material Test Reports (MTRs) for all materials used have been reviewed and approved by others at the XKT shop in Vallejo California prior to shipping to Steward Machine Company. The following items were observed:

**STEWARD MACHINE - PLANT 1:**

The QA performed a walkthrough at the shop to verify plates on site and to observe Steward Machine personnel at work machining and welding. Work performed at the Steward Machine shop as noted below:

**S4C Assembly:**

The assembly was observed removed from CNC #231 and was relocated to Bay 4 for cleaning and grinding of welds.

**S3C Assembly:**

Steward shop personnel were observed welding the e3 to f3 welds and fitting and welding the assembly straps in place. After the final MT of the e4 to f4 welds at sides A & B welder Jeff Hennington (#476) was observed utilizing Welding Procedure Specifications (WPS) P2-W128-B and P2-W126-B for FCAW-G in the 1G position to weld straps in place. The welding parameters were observed adjusted and monitored by Certified Welding Inspector (CWI) Fred Hudson (Cert. #01061501) who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 30volts/300amps using 1/16" Class E70T-1 filler and 100% CO2 at

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# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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40cfm.

## COMPONENT RELEASES.

None.

## NON-DESTRUCTIVE TESTING (NDT).

S3C:

- Side A, Indication Excavations MT and Weld Repair Final MT. (MT acceptable)
- Side A, Final MT. (MT acceptable)
- Side A & B, e3 to f3 root pass. (MT acceptable)
- Side A & B, e3 to f3 final MT. (MT acceptable)
- Side A, Strap root pass x8. (MT acceptable)
- Side A, s3 fillet welds x6. (MT acceptable)
- West End, Final MT. (MT acceptable)

The QC Inspector was observed performing 100% Magnetic Particle Testing (MPT) and accepting of items noted above prior to QA Inspector's verification MPT. See TL-6028 for MT report.



## Summary of Conversations:

The QAI noted that the S4C assembly showed signs of mismatch in way of the bottom end of the assembly. Plates showing the mismatch were plates S4C-e4, S4C-f4 & S4C-g4. The plate mismatch ranged from 1.4mm to 5.2 mm. The QAI inquired of the QCI if he was aware of the issue and the QCI replied he was and that a Non-conformance Materials Report (NCRM) has been submitted. The issue was also brought to the attention of the SMR onsite who replied she will forward the information for clarification.

## 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 Gary Thomas (916) 764 - 6027, who represents the Office of Structural Materials for your project.

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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**Inspected By:** Belford,Fritz Quality Assurance Inspector

**Reviewed By:** Foerder, Mike QA Reviewer