

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-029961**Date Inspected:** 27-Aug-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 1530**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 100**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) Andrew Webster 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. The following items were observed:

**Steward Machine - Plant 1:**

This QAI 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:

CNC Machine #176 milling plate S3C-g3. (Milling inside radius); (offline at 1600)

CNC Machine #177 milling plate S4C-h4. (Milling inside radius); (part removed at 1600 machine offline)

CNC Machine #211 milling plate S4C-c4 (Milling inside radius)

CNC Machine #225 milling plate S3C-c3. (Milling inside radius)

CNC Machine #230 milling plate S10C-a1. (Milling inside radius); (offline at 1600)

CNC Machine #240 milling plate S3C-b3. (Milling inside radius)

CNC Machine #245 milling plate S3B-g3. (Milling excess material off ends); (offline at 1700)

The following plates were noted staged throughout the shop in various stages of processing.

**Bay 2 – Plates:**

S3B-b3. Formed, stressed relieved and partially machined.

S3B-h3. Formed, stressed relieved and partially machined.

S3C-a3. Formed, stressed relieved and partially machined.

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S3C-h3. Formed, stressed relieved and partially machined.

S4B-b4. Formed, stressed relieved and partially machined.

S4B-h4. Formed, stressed relieved and partially machined.

### Bay 3 – Plates:

S3B-e3. Formed, stressed relieved and partially machined.

S4B-e4. Formed, stressed relieved and partially machined.

S3C-e3. Formed, stressed relieved and partially machined.

S4C-e4. Formed, stressed relieved and partially machined.

S3C-d3. Formed, stressed relieved and partially machined.

S4C-g4. Formed, stressed relieved and partially machined.

### Bay 4 – Plates:

S10C-a2. Formed, stressed relieved and partially machined.

S10C-b1. Formed, stressed relieved and partially machined.

S10C-b2. Formed, stressed relieved and partially machined.

S10C-c1. Formed, stressed relieved and partially machined.

S10C-d1. Formed, stressed relieved and partially machined.

S3B-a3. Formed, stressed relieved and partially machined.

S3B-c3. Formed, stressed relieved and partially machined.

S4B-a4. Formed, stressed relieved and partially machined.

S4B-c4. Formed, stressed relieved and partially machined.

S4B-d4. Formed, stressed relieved and partially machined.

S4B-g4. Formed, stressed relieved and partially machined.

S4C-a4. Formed, stressed relieved and partially machined.

S4C-d4. Formed, stressed relieved and partially machined.

S4C-h4. Formed, stressed relieved and partially machined. (moved from machine #177)

S3B-f3. Formed, stressed relieved and partially machined.

S3C-f3. Formed, stressed relieved and partially machined.

S4B-f4. Formed, stressed relieved and partially machined.

S4C-f4. Formed, stressed relieved and partially machined.

This QAI witnessed QC inspector Cory Cardwell perform 100% MT on the machined channels on the outside radius of part S10C-b2. This QAI did 10% MT verification on part S10C-b2 after the QC's inspection was completed. All MT was found to be acceptable at this time. See attached 6028 report.

### Welding Jig Bay 4 – Plates:

S10B-a1. Formed, stressed relieved, machined and blasted.

S10B-a2. Formed, stressed relieved and machined.

S10B-c1. Formed, stressed relieved, machined and blasted.

S10B-b1. Formed, stressed relieved, machined and blasted.

S10B-b2. Formed, stressed relieved, machined and blasted.

S10B-d1. Formed, stressed relieved, machined and blasted.

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This QAI noted the welding of the above mentioned plates in the welding jig. The welding carried over from the day shift. The welding was done by qualified welder Jeffery Hennington. The welding was done to the approved welding procedures. All welding done at the time of this inspector's arrival was monitored by Certified Welding Inspector (CWI) Fred Hudson. The welding finished up at 1700. The part was then rotated and set up for tomorrow morning.

Hardie Tynes:

This QAI performed a walkthrough at the shop to verify plates on site and to observe Hardie Tynes personnel at work machining plates. Work performed at the Hardie Tynes shop as noted below:

It was noted by this QAI that there was no work being performed for this job at Hardie Tynes this evening.

The following plates were noted staged throughout the shop in various stages of processing.

S4C-b4. Formed, stressed relieved and partially machined.

S3B-d3. Formed, stressed relieved and partially machined.



## Summary of Conversations:

This QAI spoke with machine operator Jimmy about what was left to be machined on part S4C-c4 before it will be taken off of machine #211.

## 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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**Inspected By:** Webster, Andrew

Quality Assurance Inspector

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**Reviewed By:** Foerder, Mike

QA Reviewer