

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-029979**Date Inspected:** 06-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**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 S4C-g4. (Milling inside radius)

CNC Machine #211 milling plate S3C-g3. (Milling excess stock off ends)

CNC Machine #225 milling plate S3C-a3. (Milling inside radius)

CNC Machine #231 milling assembly S10B. (Milling to size)

CNC Machine #240 milling plate S4C-c4. (Milling excess stock off ends)

CNC Machine #245 milling plate S4B-h4. (Milling excess stock off ends)

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

Bay 1 – Plates:

S3B-g3. Formed, stressed relieved and partially machined.

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

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

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

Bay 2 – Plates:

S3C-b3. Formed, stressed relieved and partially machined.
S3C-h3. Formed, stressed relieved and partially machined.
S4C-b4. Formed, stressed relieved and partially machined.
S4C-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.
S4C-d4. Formed, stressed relieved and partially machined.

Bay 4 – Plates:

S3B-a3. Formed, stressed relieved and partially machined.
S3B-b3. Formed, stressed relieved and partially machined.
S3B-c3. Formed, stressed relieved and partially machined.
S3B-f3. Formed, stressed relieved and partially machined.
S3C-c3. Formed, stressed relieved and partially machined.
S3C-d3. Formed, stressed relieved and partially machined.
S3C-f3. Formed, stressed relieved and partially machined.
S4B-a4. Formed, stressed relieved and partially machined.
S4B-b4. Formed, stressed relieved and partially machined.
S4B-c4. Formed, stressed relieved and partially machined.
S4B-d4. Formed, stressed relieved and partially machined.
S4B-f4. Formed, stressed relieved and partially machined.
S4C-a4. Formed, stressed relieved and partially machined.
S4C-f4. Formed, stressed relieved and partially machined.
Pallet of R3 plates.

Welding jig Bay 4 – S10C assembly Plates:

S10C-a1. Formed, stressed relieved and partially machined.
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.

This QAI noted the welding of the above mentioned plates in the welding jig. The welding was done by qualified Jeffery Hennington (476) and Benjamin Rhodes (481). The welding was done to the approved welding procedure (WPS) P2-W126-B. All welding done at the time of this inspector's arrival was monitored by Certified Welding Inspector (CWI) Fred Hudson. The welders welded the root pass on the non-shear key side after which this QAI witnessed the QC Inspector Cory Cardwell perform 100% Magnetic Partical Testing (MPT) followed by this QAI's 10% verification on the root pass. The part was flipped and the root was welded on the shear key side after

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

which this QAI witnessed the QC Inspector perform 100% MPT followed by this QAI's 10% verification on the root pass. All MPT was found to be acceptable per the contract specifications at the time of inspection. Welding was completed at 1630.

Steward Machine Plant 1 was visited by Resident Engineer Bill Casey, Senior SMR Mazen Wahbeh, Senior SMR Gary Thomas and Caltrans Toll Bridge Director Tony Auziano today. These gentlemen toured Plant 1 checking on the progress of the work being done at this location.

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:

The following plates were noted staged on the shop floor for further processing.
S3B-d3. Formed, stressed relieved and partially machined.

GREEN TAG RELEASE.

Hardie Tynes: Lot# B201-01-13

- Plate S3B-d3 was green tag released for Steward Machine. See TL-6011 for detailed information.

NON-DESTRUCTIVE TESTING (NDT).

The QA performed NDT on the following.

Plate S3B-d3 at Hardie Tynes:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S10C (Root Pass, Non-Shear Key side) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S10C (Root Pass, Shear Key side) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

The Non Destructive Testing (NDT) listed above were observed performed and accepted by the QC Inspectors prior to the QA Inspector performing the tests. The QC Inspectors performed 100% NDT with the QA Inspector performing over 10% NDT.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)



Summary of Conversations:

This QAI was informed by Steward Machine CWI Fred Hudson that this shop would start a night shift for welding next week. Mr. Hudson was not sure if welding would start on Monday the 9th of September or on Wednesday the 11th of September.

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.

Inspected By: Webster, Andrew

Quality Assurance Inspector

Reviewed By: Foerder, Mike

QA Reviewer