DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 78.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-030043
Date Inspected: 17-Sep-2013

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Steward Machine Co.

OSM Arrival Time: 1400
OSM Departure Time: 2230
Location: Birmingham, AL

CWI Name:	Fred Hudson / Jimmy Brewer	**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 #211 milling plate S3C-h3. (Milling excess stock off)
CNC Machine #230 milling S4B assembly (Milling excess stock off side B)
CNC Machine #231 milling S10C assembly (Milling excess stock off side A)

The following plates were noted staged throughout the shop in various stages of processing.
Bay 4 – Plates:
S3C-a3. Formed, stressed relieved and partially machined.
S3C-b3. Formed, stressed relieved and partially machined.
S3C-c3. Formed, stressed relieved and partially machined.
S3C-d3. Formed, stressed relieved and partially machined.
S3C-e3. Formed, stressed relieved, partially machined and stud welded.
S3C-f3. Formed, stressed relieved and partially machined.
S3C-g3. Formed, stressed relieved and partially machined.

S4B-e4. Formed, stressed relieved, partially machined and stud welded.
S4C-a4. Formed, stressed relieved and partially machined.
S4C-e4. Formed, stressed relieved, partially machined and stud welded.
Pallet of r3, t3, s3, m3, k3 and j3 plates.
p3 (x6). Cut, beveled and stud welded.

S3B assembly 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-d3. Formed, stressed relieved and partially machined.
S3B-f3. Formed, stressed relieved and partially machined.
S3B-g3. Formed, stressed relieved and partially machined.
S3B-h3. 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 welders Benjamin Rhodes (481) and John Roy (469). The welding was done to the approved welding procedure (WPS) P2-W126-B. All welding done was monitored by Certified Welding Inspector (CWI) Fred Hudson. Welding was done on side A root pass after the root pass was done it was MPT by the QC Inspector and this QAI the assembly was flipped to side B and the root pass was put in.

This QAI noted the welding of the above mentioned plates in the welding jig for night shift. The welding was done by qualified welders Daniel Rowe (73) and Jeffery Hennington (476). The welding was done to the approved welding procedure (WPS) P2-W126-B. All welding done was monitored by Certified Welding Inspector (CWI) Jimmy Brewer. Welding was continued on the B side root pass. After the root pass was welded it was MPT by the QC Inspector and this QAI. Welding continued on side B after the MPT was completed.

Blast area plates:
S4C-b4. Formed, stressed relieved and partially machined.
S4C-c4. Formed, stressed relieved and partially machined.
S4C-d4. Formed, stressed relieved and partially machined.
S4C-f4. Formed, stressed relieved and partially machined.
S4C-g4. Formed, stressed relieved and partially machined.
S4C-h4. Formed, stressed relieved and partially machined.

Steward Machine - Plant 2:
This QAI performed a walkthrough at the shop to verify plates on site and to observe Steward Plant 2 personnel at work. Work performed at the Steward Plant 2 shop as noted below:

No work being done on this project at this time.

The following plates were noted staged throughout the shop.
S3B-e3. Formed, stressed relieved, partially machined and stud welded.
p3 (x2). Cut, beveled and stud welded.

NON-DESTRUCTIVE TESTING (NDT).
The QA performed NDT on the following.

Assembly S3B (Root Pass side A) at Steward Plant 1:
- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S3B (Root Pass side B) 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.

Summary of Conversations:
This QAI was informed by the welding supervisor that the plates for the S4C assembly would be blasted around 4am then fit for welding. This QAI confirmed this information with the night shift supervisor.

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