

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-029939**Date Inspected:** 22-Aug-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**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:

Welder Daniel Rowe #73:

The welder was observed welding the S10B Upper Saddle Assembly (Plates a2 thru d1) utilizing Welding Procedure Specification (WPS) P2-W126-B Flux Core Arc Welding-Gas Shielded (FCAW-G) in the 1G position. Welding parameters were adjusted and monitored by Certified Welding Inspector (CWI) Fred Hudson who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 278Amps, 29Volts with E70T-1 Class 1/16" diameter wire with a pre heat of over 70 degrees Fahrenheit. The welder was observed welding the assembly root pass as sequenced earlier by the shop supervisor.

Welder Jeff Hennington #476:

The welder was observed welding the S10B Upper Saddle Assembly (Plates a2 thru d1) utilizing Welding Procedure Specification (WPS) P2-W126-B Flux Core Arc Welding-Gas Shielded (FCAW-G) in the 1G position.

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Welding parameters were adjusted and monitored by Certified Welding Inspector (CWI) Fred Hudson who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 280Amps, 28Volts with E70T-1 Class 1/16" diameter wire with a pre heat of over 70 degrees Fahrenheit. The welder was observed welding the assembly root pass as sequenced earlier by the shop supervisor.

Assembly S10B as welded by welders #73 and #476 above includes plates S10B-d1, S10B-c1, S10B-b1, S10B-a1, S10B-b2, S10B-a2.

Non-Destructive Testing (NDT)

The QA performed Magnetic Particle Testing (MPT) on the following:

Assembly S10B (North Side) Root Pass. (MT Accept., see report form TL-6028 for detailed information.)

Plate Milling:

CNC Machine #176 milling plate S4C-h4. (Milling outside radius)

CNC Machine #177 milling plate S3B-h3. (Milling outside radius)

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

CNC Machine #215 milling plate S4C-e4. (Milling weld bevel)

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

CNC Machine #230 milling plate S10C-a1. (Milling inside radius troughs)

CNC Machine #240 milling plate S4B-d4. (Milling inside radius)

CNC Machine #245 milling plate S3B-g3. (Milling inside radius)

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

Bay 1 - Plates:

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.

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

Bay 3 – Plates:

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

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

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

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

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

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

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

Bay 4 & 5– Plates:

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

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

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

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

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S10B-a2. Formed, stressed relieved and partially machined.
S10B-b2. Formed, stressed relieved and partially machined.
S4C-d4. Formed, stressed relieved and partially machined.
S10C-c1. Formed, stressed relieved and partially machined.
S10C-b1. Formed, stressed relieved and partially machined.
S10C-b2. Formed, stressed relieved and partially machined.
S4B-c4. Formed, stressed relieved and partially machined.
S3C-g3. Formed, stressed relieved and partially machined.
S10C-a2. Formed, stressed relieved and partially machined.
S3B-b3. Formed, stressed relieved and partially machined.
S3C-a3. Formed, stressed relieved and partially machined.
S3C-d3. Formed, stressed relieved and partially machined.
S4C-a4. Formed, stressed relieved and partially machined.
S3B-a3. Formed, stressed relieved and partially machined.
S3C-b3. Formed, stressed relieved and partially machined.
S3B-c3. Formed, stressed relieved and partially machined.
S4B-a4. Formed, stressed relieved and partially machined.
S4B-b4. Formed, stressed relieved and partially machined.

Steward Machine - Plant 2:

The QA performed a walkthrough at the shop to verify plates on site and to observe Steward Machine personnel at work machining and welding. The inspector observed welders assembling the Lower Saddle Assembly jigs at the shop. Welders were noted welding angle iron to the backing plate. Certified Welding Inspector (CWI) Darrel Nicks was onsite overseeing the welders. Also noted were welders prepping the weld bevel on the E1 thru P4 pieces.

Hardie Tynes:

The QA 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 Steward Machine shop as noted below:

The following plate was noted staged in the shop awaiting further processing.

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

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

No machining was performed on the project this day.

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Summary of Conversations:

As required for scope of work.

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:	Belford,Fritz	Quality Assurance Inspector
Reviewed By:	Foerder,Mike	QA Reviewer
