

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 #: 78.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-030051**Date Inspected:** 20-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1430**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:

Welders Ben Rhodes (#481) & John Ray (#469):

The welders were observed welding the S4C assembly utilizing Welding Procedure Specification (WPS) P2-W126-B for Flux Core Arc Welding-Gas Shielded (FCAW-G) in the 1G position. 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 40cfm. Assembly S4C as noted above includes plates S4C-f4, S4C -g4, S4C -d4, S4C -c4, S4C -h4, S4C -b4 & S4C -a4.

Welder Ben Rhodes (#481) was also observed welding the S3C-h3 plate "buttering" or overlaying the miss cut in way of the plate's inside curve weld bevel. The welder utilized unapproved Welding Procedure Specification (WPS) P2-OVERLAY-R2 for Flux Core Arc Welding-Gas Shielded (FCAW-G) in the flat position. The welding

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parameters were observed adjusted and monitored by Certified Welding Inspector (CWI) Fred Hudson (Cert. #01061501). The welding parameters were measured to be 27.5volts/250amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm. The Welding Procedure Specification (WPS) noted above has been submitted to METS with approval pending after review.

S4B Assembly:

Shop personnel were observed attempting to fit the S4B-e4 plate in place for welding. Multiple attempts were made at grinding the plate to fit but with no success.

S10C Assembly:

The seal weld in way of the shear key relief was observed welded by welder John Ray (#469) utilizing approved fillet weld welding procedure specification P2-W101-B as approved for this purpose by the SMR. Welding parameters were monitored by CWI Fred Hudson. Magnetic Particle Testing was performed by QC on the assembly's welded lugs and a linear indication was noted on one of the lugs. The indication was ground out, retested and was accepted by QC and the QAI with no welding repair required. After welding of the seal weld and grinding of the lug indication was completed the assembly was relocated to the paint tent for blasting and painting prep.

Plate Milling:

CNC Machine #230 milling S3B assembly (Milling)

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

Bay 4 & 5- Plates:

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

S3C-b3. Formed, stressed relieved and partially machined.

S3C-h3. Formed, stressed relieved and partially machined. (RFI pending for weld overlay repair of miss cut)

S3C-c3. Formed, stressed relieved and partially machined.

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

S3C-g3. Formed, stressed relieved and partially machined.

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

S3B-e3. Milling complete.

S3C-e3. Milling complete.

S4C-e4. Milling complete.

S4B-e4. Milling complete.

COMPONENT RELEASES.

None.

NON-DESTRUCTIVE TESTING (NDT).

S10C Assembly Visual Testing (VT) and Magnetic Particle Testing (MPT):

- VT and MPT of Seal Weld Acceptable. See TL-6028 for additional information.

- VT and MPT of Assembly Lugs (x4) Acceptable. See TL-6028 for additional information.

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Summary of Conversations:

The QC Inspector asked the QA Inspector to review the release package for the S10C assembly and to note any missing documents that are required.

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
