

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-030052**Date Inspected:** 21-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Steward Machine Co.**Location:** Birmingham, AL

CWI Name:	Fred Hudson (Cert. #01061501)			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 John Ray (#469):

The welders were observed welding the S4C assembly East end root and cover pass 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:

The welder was observed fillet welding the S3 round bars to the J3 and M3 plates utilizing Welding Procedure Specification (WPS) P2-W101-B for Flux Core Arc Welding-Gas Shielded (FCAW-G) in the 2F position. The

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

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 28volts/260amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm.

S4B Assembly:

Shop personnel were observed attempting to fit the S4B-e4 plate in place for welding. After multiple attempts were made at grinding the e4 plate to fit, a satisfactory fit was achieved and the assembly and plate were then relocated to the paint area for blasting of faying surfaces as required by the contract drawings prior to assembly.

S10C Assembly:

The assembly coating mils were verified by the QA inspector at the paint tent. Readings taken ranged from 4.0 to 5.0 mils and are within acceptable limits. The assembly was then loaded onto a truck for release to the job site.

Plate Milling:

CNC Machine #230 milling S3B assembly (Off)

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.

S10C Assembly released for the SFOBB job site.

- Blue Tag release with SMR Reference No. 77-921 and Lot No. B359-60-13. (See NCR's below)

Non Conformance Report (NCR):

The QC Inspector presented the QA inspector with documents detailing the process for the assembly for review. The documents included a Certificate of Compliance (COC) from Steward Machine Co., a Certificate of Compliance (COC) and Heat Charts from Pinson Valley Heat Treat, Magnetic Particle Testing reports and paint inspection reports from Steward Machine Co.. After review by the QA Inspector, the provided documents appeared to be in general conformance except for the following:

NCR #1:

Welds and weld repairs were Magnetic Particle Tested (MPT) and accepted before 48 hours had elapsed as required by contract documents. See report TL-6014 for detailed information.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

NCR #2:

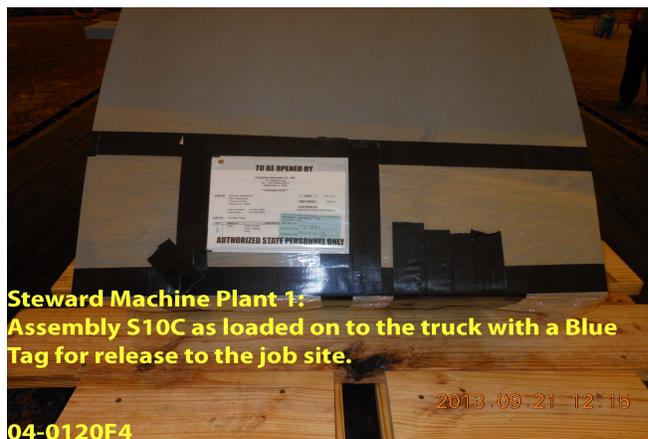
The contractor opted to ship the S10C assembly before the coating could be tested as required by contract documents. See report TL-6014 for detailed information.

NON-DESTRUCTIVE TESTING (NDT).

S4C Assembly Visual Testing (VT) and Magnetic Particle Testing (MPT):

- VT and MPT of Root pass acceptable. (See TL-6028 for more information.)

The QC Inspector was observed performing 100% Magnetic Particle Testing (MPT) and accepting of items noted above prior to QA Inspector's verification MPT.



Summary of Conversations:

During the document review for the S10C assembly release, it was noted that the blast profile for the faying surfaces was checked with the Testex Press-O-Film Coarse tape instead of the X-Coarse as prescribed by the ASTM 4417 Method C. The QA appraised the SMR onsite of the situation and was informed that the test was acceptable as the blast profile check using the Press-O-Film is primarily for testing prior to the application of paint.

The QAI inquired of the QCI weld repairs that were Magnetic Particle Tested (MPT) before 48 hours had elapsed as required by contract documents. The QC Inspector relayed to the QA Inspector that he was aware of the issue but that he was following directions as ordered and that an RFI has been submitted to waive the 48hour requirements for MPT.

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
