

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 #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-029997**Date Inspected:** 11-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 (#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:

STEWARDS 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 John Ray #476:

The welder was observed welding the S10C Upper Saddle Assembly East and West ends root pass for plates a2 and b1 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 who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 30volts/290amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm. After welding each root pass the welder was then observed continue with welding to fill the weld groove as required. Assembly of the S10C as noted above includes plates S10C-d1, S10C-c1, S10C-b1, S10C-a1, S10C-b2 & S10C-a2.

Welder Ben Rhodes #481:

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The welder was observed welding the S4B Lower Saddle Assembly South and North side root 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 who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 30volts/295amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm. After welding both root passes the welder was then observed continue with welding to fill the weld groove as required. The welding of the root pass and cover were performed sequentially as plotted by the shop supervisor. Assembly of the S4B as noted above includes plates S4B-f4, S4B-g4, S4B-d4, S4B-c4, S4B-h4, S4B-b4, & S4B-a4.

Plate Milling:

CNC Machine #211 milling plate S4C-g4 (Milling inside radius troughs)

CNC Machine #245 milling plate S3B-h3. (Milling inside radius)

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

Bay 2 – Plates:

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

S4C-h4. Formed, stressed relieved and partially machined.

Bay 3 – Plates:

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

Bay 4 & 5– Plates:

S10B Assembly (Plates c1, d1, b1, a1, b2 & a2). (6)

S10C Assembly (Plates c1, d1, b1, a1, b2 & a2). (6)

S4B Assembly (Plates f4, g4, d4, c4, h4, b4 & a4). (7)

S3B-f3. Formed, stressed relieved and partially machined.

S3B-a3. Formed, stressed relieved and partially machined.

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

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

S3B-b3. Formed, stressed relieved and partially machined.

S3B-c3. Formed, stressed relieved and partially machined.

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

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

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

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

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

S4C-c4. Formed, stressed relieved and partially machined.

S4C-a4. Formed, stressed relieved and partially machined.

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

S4C-f4. Formed, stressed relieved and partially machined.

S4C-d4. Formed, stressed relieved and partially machined.

STEWARD MACHINE - PLANT 2:

No welding or cutting on contract items at the plant on this day. Plates noted below were staged on the shop floor

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awaiting approval of the weld procedure for base metal repairs and stud welding repairs.

S3B-e3

S3C-e3

S4B-e4

S4C-e4

COMPONENT RELEASES.

None this day.

NON-DESTRUCTIVE TESTING (NDT).

The QA performed NDT on the following.

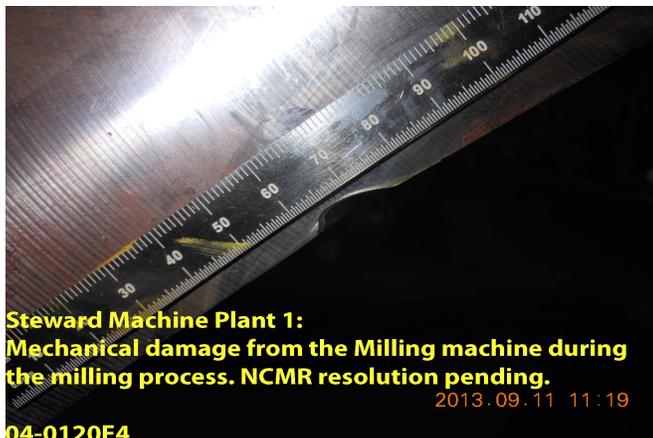
S10C Assembly Visual Testing (VT) & Magnetic Particle Testing (MPT):

East End Root Pass VT & MPT Acceptable. (See TL-6028 for detailed information).

West End Root Pass VT & MPT Acceptable. (See TL-6028 for detailed information).

S4B Assembly Visual Testing (VT) & Magnetic Particle Testing (MPT):

South Side Root Pass VT & MPT Acceptable. (See TL-6028 for detailed information).



Summary of Conversations:

The following items were discussed during the day after the QA Inspectors return from resetting his TAR. The SMR discussed with the QAI the Seal Weld for the S10B assembly between the c1 and d1 plates after

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machining of shear key relief revealed a seam between the two plates. The fillet weld Welding Procedure Specification P2-W101-B was approved by the SMR for use as a WPS for the Seal Weld. The seal weld was completed using the WPS as noted above. Magnetic Particle Testing (MPT) of the Seal Weld was waived as per SMR Arron Prchlik.

The QC Inspector Dale Janiszewski relayed to the QA Inspector that a non-conformance materials reports (NCMR) was submitted for a nick on the S10B assembly in way of the inner curve on the shear key relief side and East of the shear key centerline. The mechanical damage was measured to be 15 x 4 x 3.5 deep. A resolution for NCMR is currently pending.

The SMR also relayed to QA Inspector that the Base Metal Weld Repair procedure for the S10B Assembly and the Stud Weld repair procedure have been submitted and were currently under review for approval before any repairs could be performed.

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
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Reviewed By:	Foerder,Mike	QA Reviewer
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