

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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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-030047**Date Inspected:** 16-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:

Welder Ben Rhodes #481:

The welder was observed tack welding and fillet welding the T3 round bars to the R3 plates utilizing Welding Procedure Specification (WPS) P2-W101-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 28volts/260amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm.

S10C Assembly:

The QC Inspectors were observed taking dimensional readings of the assembly prior to reposition on CNC #231 for further milling.

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S3B Assembly:

The painters were observed sand blasting the Class B Faying surfaces of the assembly plates to SP10 prior to assembly. The plates sand blast profiles were verified by NACE level II Inspector Chris Shifflett using ASTM 4417 Method C with X-Coarse Tape with an indication range of 1.5 to 4.5 Mils. The profile verified by tape ranged from 1.7 to 2.9 mils well within the acceptable limits as per contract documents. After profile verification the plates were moved to the weld shop where they were immediately assembled for welding.

Plate Milling:

CNC Machine #211 milling plate S4C-h4 (Milling inside radius)

CNC Machine #230 milling S4B assembly (Milling North side)

CNC Machine #231 milling S10C assembly (Milling assembly ends)

CNC Machine #245 milling plate S3C-h3. (Milling outside radius)

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

Bay 3 – Plates:

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

Bay 4 & 5– Plates:

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

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

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.

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-f3. Formed, stressed relieved and partially machined.

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

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

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.

COMPONENT RELEASES.

None.

NON-DESTRUCTIVE TESTING (NDT).

None

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The completed and accepted work observed at this location appeared to be in compliance with the contract specifications.



Summary of Conversations:

The QC Inspector asked the QA Inspector if tack welding of the T3 round bars to the R3 plates required a Certified Welding Inspector. The QA informed the QC inspector that even though it is tack welding, a Certified Welding Inspector (CWI) is still required to be onsite to monitor welding operations.

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
