

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-030055
Date Inspected: 23-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 welder was observed welding the S4B assembly, welding the plate S4B-e4 cover pass on side B utilizing Welding Procedure Specification (WPS) P2-W128-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 28.5volts/300amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm. Assembly S4B as noted above includes plates S4B-e4, S4B -f4, S4B -g4, S4B -d4, S4B -c4, S4B -h4, S4B -b4 & S4B -a4. The welder was also observed tack welding the J3, K3, M3 P3 plates to the R3 and e4 plates as noted on the drawings utilizing Welding Procedure Specification (WPS) P2-W128-B and (WPS) P2-W126-B as dictated by weld bevel prep and contract drawings.

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Welder Ben Rhodes #481:

The welder was observed welding the S4B assembly, welding the plate S4B-e4 cover pass on side A utilizing Welding Procedure Specification (WPS) P2-W128-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 28.5volts/300amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm. Assembly S4B as noted above includes plates S4B-e4, S4B -f4, S4B -g4, S4B -d4, S4B -c4, S4B -h4, S4B -b4 & S4B -a4. The welder was also observed tack welding the J3, K3, M3 P3 plates to the R3 and e4 plates as noted on the drawings utilizing Welding Procedure Specification (WPS) P2-W128-B and (WPS) P2-W126-B as dictated by weld bevel prep and contract drawings.

S4C Assembly:

The assembly was relocated to Bay 3 awaiting the availability of the CNC #230.

S3C Assembly:

Plates for the assembly were blasted with blast profiles checked before relocating to the weld area for assembly. Blue RTV silicone was applied to the plate grooves before being assembled. Assembly plates were then tacked welded by John Ray (#469) utilizing Welding Procedure Specification (WPS) P2-W128-B for Flux Core Arc Welding-Gas Shielded (FCAW-G).

Plate Milling:

CNC Machine #230 milling S3B assembly (Milling A and B Sides)

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.

COMPONENT RELEASES.

None

NON-DESTRUCTIVE TESTING (NDT).

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

- VT/MPT Cover pass of e4 plate to f4 acceptable. (See TL-6028 for more information.)

- T3 round bar to R3 plate fillet welds VT/MT acceptable. (See TL-6028 for more information.)

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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:

The QA Inspector noted that the QC Inspector was performing Magnetic Particle Testing (MPT) prior to the weld for e4 to f4 of the S4B assembly was ground flush. The QA Inspector informed the QC of the drawing requirements and the QC Inspector informed the QA that he would redo the MPT after the weld has been ground flush.

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
