

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 #: 1.28**WELDING INSPECTION REPORT**

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027509
Date Inspected: 26-Apr-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: jobsite

CWI Name:	Steve McConnell	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:	SAS project	

Summary of Items Observed:

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and /or monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Self Anchored Suspension (SAS) Tower: This QA Inspector observed work and/or performed QA verifications at the locations noted below.

3-meter elevation, Bearing Plate # 007: This QA Inspector observed welding was not being performed at this location and was informed by ABF Welding Supervisor Danny Ieraci it was due to the distortion of the plate in the weld joint and that the plate will most likely be cut out and replaced with a new plate.

This QA Inspector was informed by Lead QA Inspector Danny Reyes that Assistant Structural Material Representative (ASMR) Keivan Hassan wanted to look at the welding and possibly take some measurements of the distortion at weld joint #007. This QA Inspector met ASMR Keivan Hassan at the tower and we proceeded to the work location. It was observed the induction heating equipment was still in position behind the plate to be measured, which caused interference with taking the measurements. ABF welding personnel Richard Garcia informed this QA Inspector he would be moving the induction heating equipment to weld joint #008 later in the shift. This QA Inspector suggested to ASMR Keivan Hassan the measurements be taken after the equipment was moved. Later this shift this QA Inspector observed the induction heating equipment had been moved and took the following measurements.

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This QA Inspector measured the distance between the outer edges of the bearing plates on the side where welding was not performed and then at the same elevation on the side where welding was performed.

Elevation	Plates Not Welded	Welded Plate	Difference
Plate Elevation- 465 mm	318	347 mm	29 mm
Plate Elevation- 935 mm	318	350 mm	32 mm
Plate Elevation- 1400 mm	320	350 mm	30 mm
Plate Elevation- 1870 mm (top)	325	352 mm	27 mm

This QA Inspector observed what appeared to be slight distortion at the top of the plates not welded and took a measurement 150 mm from the end (towards center) and observed there appeared to be approximately 7 mm of distortion at this location. See photo below for more details.

3-meter elevation, Bearing Plate # 008: This QA Inspector randomly observed ABF welding personnel Richard Garcia (#5892) working on fitting up Bearing Plate #008 and attaching various bars and plates to restrain the plate from movement during welding. ABF welding personnel Richard Garcia (#5892) informed this QA Inspector he had purposefully fit the bearing plate minus 5 mm from square. This QA Inspector performed a random visual verification and the plate appeared to be minus 5 mm from square. This QA Inspector randomly observed the fitting of restraints, but did not observe production welding being performed this shift.

3-meter elevation, Bearing Plate # 005 and #006: This QA Inspector observed ABF welding personnel Jeremy Dolman (#5042) using the Flux Cored Arc Welding (FCQW) process for the fill passes. This QA Inspector randomly observed QC Inspector Steve McConnell verify the following parameters; 248 amperes and 23.2 volts at a travel speed of 166 mm per minute to produce a heat input value of 2.08 kJ per mm. This QA Inspector reviewed the Welding Procedure Specification (WPS) ABF-WPS-D15-3160 Rev-0, being used by QC and observed the parameters were within the ranges specified. This QA Inspector observed the induction heating blankets were used to preheat the base metal. This QA Inspector used an electronic temperature gauge and verified the preheat temperature was above the minimum temperature for the welding heat input and material thickness specified on the WPS. The welding observed appeared to comply with the contract requirements. ABF welding personnel Jeremy Dolman (#5042) informed QC Inspector Steve McConnell and this QA Inspector the length of the weld had been divided into 6 areas and a sequencing procedure would be used to help control distortion.

This QA Inspector observed multiple restraints had been welded onto the plate being welded in an effort to control distortion due to weld shrinkage. This QA Inspector observed 5 bars at various elevations from the bottom to the top and 3 plates as strong backs had been welded on. This QA Inspector periodically observed QC Inspector Steve McConnell monitoring the welding at this location.

This QA Inspector observed after the lunch break that production welding had been stopped and additional restraining aids were being fit up. This QA Inspector observed braces made from piping were being positioned from the front side of the plate to be welded to the front side of existing bearing plates on the opposite side of the space. Production welding was not observed the remainder of the shift this date.

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At various locations at the 3-meter and 9-meter elevations this QA Inspector randomly observed various ABF personnel removing the tack welds holding up various doubler plates. QC Inspectors Steve McConnell and Jesus Cayabyab informed this QA Inspector the plates had been fit up prior to performing Ultrasonic Testing (UT) at the adjacent Electro Slag Weld joints and the plates blocked the UT scanning area, therefore the plates were going to be removed, the areas inspected (visual, Magnetic Particle Testing and UT) and if acceptable the plates would re-fit up and welded. This QA Inspector observed QC Inspector Steve McConnell performing UT at weld joint ESW-D from face-A for a length of approximately 600 mm. QC Inspector Steve McConnell informed this QA Inspector the area had passed the visual, MT and UT inspections. This QA Inspector informed Lead QA Inspector Danny Reyes of the observation and conversation noted above.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) personnel, QC personnel and Caltrans personnel during the shift. Except as described above there were no notable conversations.



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 Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Hager,Craig

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer