

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013438**Date Inspected:** 26-Apr-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Tom Pasqualone, Steve McConnell, Wilfredo Daquinag			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 OBG 3W/4W-A, 1W/2W-E,		

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 1W/2W-E, 3W/4W-A and the following observations were made:

3W/4W-A

Upon the arrival of the QA Inspector it was randomly observed the ABF welding operators Jordan Hazelaar and Bryce Howell were setting up the submerged arc welding (SAW) machines in preparation of performing the SAW root pass. The QA Inspector noted the shielded metal arc welding (SMAW) full length tack weld was previously deposited on both sides of the weld joint against the bevel and the steel backing bar. The QA Inspector randomly observed the ABF welding personnel had pre determined and indicated with a distinguishing marking on base material the sequencing in which the joint would be welded. The QA Inspector observed the weld was broken into 5 sections beginning in the center and moving outward toward the edges of deck plate.

A3-A5

The QA Inspector randomly observed the ABF welding operator Jordan Hazelaar begin welding the SAW root pass in the center of A3 and weld to the end of section A5. The QA Inspector randomly observed the SAW parameters and they were 562 Amps, 33.4 Volts and a travel speed of 390mm/min. The QA Inspector noted the SAW parameters appeared to be in general compliance with ABF-WPS-D1.5-4042B-1. After the root pass was completed between the center of A3-A5, the SE QC Inspectors performed MT of the root pass. The QA Inspector noted no relevant indications were located at the time of the testing. The QA Inspector performed random 10% of the completed root pass between A3-A5, no relevant indications were located at the time of the testing. After the

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root pass was completed the QA Inspector randomly observed the ABF welding operators begin performing the SAW fill pass. The QA Inspector randomly observed the ABF welding operators performing the SAW fill passes for the remainder of the shift.

A1

The QA Inspector randomly discovered and noted a crack at the end of the above identified weld joint in section 3W/4W-A5. The QA Inspector observed the crack to start at the beginning of the weld tab and propagate approximately 55mm and stop and cracked again between Y=155mm-180mm. The QA Inspector noted the crack was located by the QA Inspector Rick Bettencourt. The QA Inspector noted the ABF welding operator nor the SE QC Inspector Steve McConnell were aware of the cracked area of the shielded metal arc welding (SMAW) root pass. The QA Inspector noted the SMAW root pass was previously welded on Friday 4/ 23/10 approximately 200mm long, in an attempt to eliminate any cracking. The QA Inspector informed them of the cracked area just prior to the ABF welding operator performing the SAW root pass. After the extent of the cracks length was determined by the QC Inspector utilizing the MT method, the ABF representative Jordan Hazelaar utilized a burr bit grinder to excavate the area where the crack was present. The QA Inspector randomly observed the QC Inspector Steve McConnell inform the ABF representative Dan Ieraci engineering approval was required prior to any weld repairs being made (see summary of conversations). The QA Inspector noted no welding repairs were made prior to the end of the QA Inspectors shift on the job site on today's date.

A5

Upon discovery of the cracked root pass identified above in A1, the SE QC Inspector Dan McConnell discovered two cracks in the same location as A1 on both sides of the root pass. The QA Inspector noted the same SMAW root pass described above was performed at the end of A5 to eliminate the cracking issue. After the extent of the cracks length was determined by the QC Inspector utilizing the MT method, the ABF representative Jordan Hazelaar utilized a burr bit grinder to excavate the area where the crack was present. The QA Inspector randomly observed the QC Inspector Steve McConnell inform the ABF representative Dan Ieraci engineering approval was required prior to any weld repairs being made (see summary of conversations). The QA Inspector observed the crack to start at the beginning of the weld tab and propagate approximately 55mm from the end of the joint on the 3W side and 60mm from the end on the 4W side. After a short time the QA Inspector returned to the A5 weld segment where the cracked areas were previously discovered and excavated. The QA Inspector observed the area had been repaired by welding prior to any engineering approval to do so. The QA Inspector informed the QC Inspector Steve McConnell of the repaired area, the QA Inspector noted the QC Inspector was not aware the ABF welding operator had welded over the area (see summary of conversations)

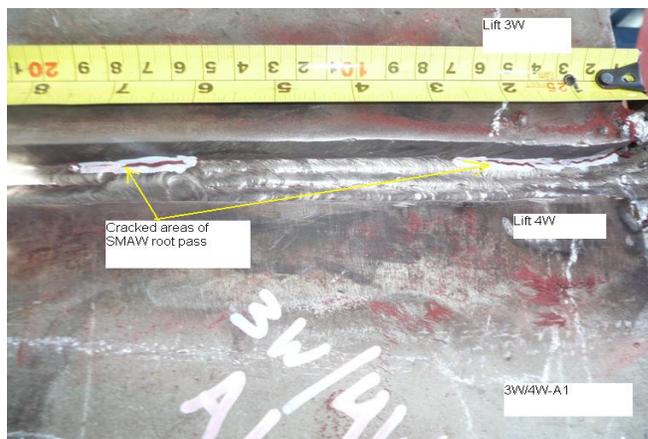
1W/2W-E2

The QA Inspector randomly observed the ABF welders had previously started the induction heating blankets to ensure the minimum required preheat of 150°F was achieved prior to welding. The QA Inspector randomly verified utilizing a 150°F temperature indicating marker and noted the minimum required preheat had been achieved. The QA Inspector observed the ABF welder to be utilizing a semi automated FCAW track system for welding the above identified weld joint. The QA Inspector randomly observed the SE QC Inspector identified as Tom Pasqualone set the FCAW machine to the parameters of the approved WPS. The QA Inspector randomly observed the FCAW parameters were 254 Amps, 24.1 Volts and a travel speed of 250mm/min. The QA Inspector randomly observed the ABF welder Song Toa Huang begin the FCAW fill pass, once the semi automated track system reached a certain point the ABF welder Huang Jin Quan would observe the welding arc for the remainder

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of the weld. The QA Inspector noted the ABF welders did not complete the weld segment E2 on the QA Inspectors shift.



Summary of Conversations:

The QA Inspector informed the QC Inspector Steve McConnell of the crack discovered at the end of weld segment A1. The QC Inspector observed the crack and acknowledged the cracked area. A short time later the QC Inspector informed the QA Inspector of two cracks at the opposite end of the weld joint in weld segment A5. Mr. McConnell informed the QA Inspector he was taking pictures and reporting the cracks to his supervisor Leonard Cross to submit for engineering approval of the repairs. The QA Inspector observed the cracked areas at the end of A5 had been excavated and repaired by welding with out approval. The QA Inspector asked the QC Inspector if he was aware the area had been repaired by welding without approval. The QC Inspector informed the QA Inspector he was not aware. After the QC Inspector observed the area had been repaired the QC Inspector informed the QA Inspector he could not stop the welder rather just report it and document it. The QA Inspector informed the QC Inspector an incident report would be written for repairing a crack by welding with out engineering approval.

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 Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
