

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-013058**Date Inspected:** 15-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:	Bnifacio Daquinag, Tony Sherwood, Bernard Docena	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 1W/2W-D				

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-D, 1W/2W-A 2W/3W-A and the following observations were made:

1W/2W-A

The QA Inspector randomly observed all of the shielded metal arc welding (SMAW) weld repairs had been completed prior the QA Inspectors arrival in the morning. The Smith Emery (SE) Quality Control (QC) Inspector Steve McConnell informed the QA Inspector the preliminary ultrasonic testing (UT) had been previously completed. The QC Inspector went on to inform the QA Inspector the official UT would not be performed until the afternoon when the 24 hour NDT hold has expired. The QA Inspector no additional work was performed at the above identified location.

1W/2W-D

Upon the arrival of the QA Inspector at the above identified location it was observed that a shielded metal arc welding (SMAW) root pass had been previously completed. The QA Inspector randomly observed several locations directly under the longitudinal stiffeners where the CJP groove weld had been welded out root/fill/cover. The QA Inspector noted the areas that were welded out to completion were approximately 100mm on either side of the longitudinal stiffeners a total weld length of 200mm. The QA Inspector randomly observed the SE QC Inspector Bernard Docena was present at the above identified location monitoring and recording the in process production welding.

D1/D2

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The QA Inspector randomly observed the ABF welder identified as Chun Fai Tsui was performing SMAW between the locations identified above. The QA Inspector randomly observed the ABF welder was performing the SMAW fill/ cover passes between the 200mm segments of weld previously completed under the stiffeners as described above. The QA Inspector noted the SMAW root pass had been previously completed to the QA Inspectors arrival. The QA Inspector randomly observed the ABF welder performing the SMAW fill/cover passes for the duration of the QA Inspectors shift. The QA Inspector noted the ABF welder was utilizing 5/32" E7018 H4R low hydrogen electrodes with 162 Amps. The QA Inspector noted the CJP groove as well as surrounding base material was being maintained above 150°F. The QA Inspector noted the SMAW parameters appeared to be in general compliance with ABF-WPS-D1.5-1040-C. The QA Inspector randomly observed the ABF welder complete the area identified above. The QA Inspector observed and noted all weld segments between the longitudinal stiffeners were completed on this date. The QA Inspector noted additional fit up and welding has yet to be performed on the complete joint penetration vertical groove welds for the longitudinal stiffeners.

2W/3W-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 6 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 565 Amps, 33.4 Volts and a travel speed of 385mm/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 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.

A5

The QA Inspector randomly discovered and noted a crack at the end of the above identified weld joint in section 2W/3W-A5. The QA Inspector observed the crack to start at the beginning of the weld tab and propagate approximately 450mm intermittently down the edge of the bevel on both sides of the weld joint. 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 Bnifacio Daquinag were aware of the cracked area of tack weld. 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 Dan Ieraci utilized a burr bit grinder to excavate the area where the crack was present. The QA Inspector randomly observed the QC Lead Inspector Mike Johnson inform the ABF representative Dan Ieraci

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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.



Summary of Conversations:

The QA Inspector asked the QC Inspector Bnifacio Daquinag what he intended to do in regards to repairing the cracked tack weld. The QC Inspector informed the QA Inspector he would do as directed by the QC Lead Inspector Mike Johnson. Mr. Johnson informed the QA Inspector he would present the pictures and dimensions of the cracked area the ABF Welding Quality Control Manager (WQCM) Jim Bowers. Mr. Johnson went on to inform the QA Inspector a repair procedure would be written and submitted to the department for engineering approval prior to performing any weld repairs.

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
