

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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-028701**Date Inspected:** 31-Oct-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job site

CWI Name:	N/A	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:	OBG	

Summary of Items Observed:

Quality Assurance Inspector (QAI) Rodney Patterson was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

The QAI was assigned by the QA Task Leader to the to perform Ultrasonic verification of planar indications height in the weld from the ABF QC and QA joint reports on the Tower Electro Slag butt weld designated as ESW "V". Upon arrival to the site the QAI observed ABF QC inspector Andrew Keach, Jesse Cayabyab as well as the ABF QC lead Lenard Cross. During discussions with the ABF QC lead Lenard Cross it was explained to the QAI that ABF QC would be performing exploratory ultrasonic testing to determine the validity a 6db drop technique for the determination of height on the linear recordable indications for the ESW welds. The height of the indications in the welds would then be confirmed by excavation of the weld. The ABF QC inspectors were then observed performing exploratory Ultrasonic testing with 2.25 MHz 45 and 70 degree AWS transducers as well as a 2.25 MHz, .25" mini transducer on the ESW Weld designated as ESW "V".

Later in the shift ABF QC the ABF QC lead Lenard Cross arrived onsite with a Flawtech brand test plate used for inspector practical examinations. The 25mm thick test plate (ID UT-774) indications are confirmed by the use of an answer key that shows a height measurement of defects in the test plate. Mr. Cross stated to the QAI that if the 6db drop for height technique was performed on the test plate and the results of the height matched the answer key it could possibly be deemed a valid technique for the ESW welds. The QAI performed verification with a 2.25 MHz 70 degree AWS transducer of the test plate in way of two known defects flaws designated as #15 and #52. Flaw #15 showed a height of 8mm and flaw# 52 showed a height of 9mm when utilizing a 6db drop technique for

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height. After review of the answer key it was confirmed that the height for flaws #15 of 8mm and #52 of 8mm were very similar in height to the results observed during ultrasonic examination. After closer review of the answer key the QAI observed that the manufactures of the test plate noted, that the height of the flaws in the test plate had also been confirmed ultrasonically, and the technique used for height measurement was not listed. The results of the exploratory 6db drop method on the test plate were found to be inconclusive.

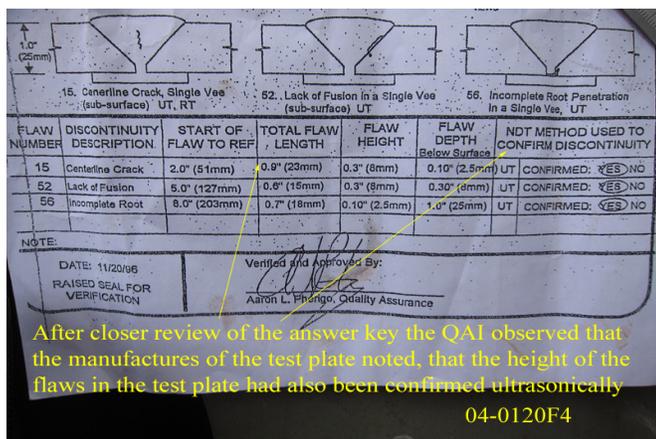
The QAI then spent a portion of the shift mapping the beam spread of the 70 Degree AWS transducer in order to plot the ultrasonic beam profile during examination of the 80mm ESW weld.

The results of the ABF QC findings were not prepared for QA review at the end of the shift.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

Summary of Conversations:

Conversations relevant to the work being performed.



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: Patterson, Rodney

Quality Assurance Inspector

Reviewed By: Reyes, Danny

QA Reviewer