DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

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

Report No: WIR-028238
Date Inspected: 20-Aug-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: 1900
Location: jobsite

CWI Name:	Fred Michaels			**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 (QA) Matthew Daggett was at the American Bridge/Fluor (ABF) job site at the San Francisco/Oakland Bay Bridge 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:

1. Welding 12E-116.5-E5 Deck Access Hole

2. Weld Repairs E123.5-E2.1- BF-1

3. Weld Repairs E122.4-E2.1-BF-1

4. Magnetic Particle Testing of K Barrier W2-SB27-002, and E5-SB22A-001

Welding 12E-116.5-E5 Deck Access Hole

The QA inspector randomly observed the in process Shield Metal Arc Welding being performed by ABF welding personnel Jin Pei Wang (7299) on Face B of Deck Access Hole 12E-116.5-E5. The welder spent the shift depositing the cap passes with approximately 98% being completed at the end of the shift. QC inspector Fred Michels was noted to be present in order to monitor the progress and ensure the welding was within the established Welding Procedure Specification (WPS) noted as ABF-WPS-D15-1110-A and supporting Procedure Qualification Records (PQR). Prior to initiating the welding at this location the QC inspector observed the preheat temperature,

using a Raytek non-contact Thermometer, was sufficient and compliant to the above-mentioned WPS. Using a Tempil Stick, (temperature indicating crayon)the preheat and interpass temperature was then verified by this QA inspector to be greater than 150F and the parameters, using a Fluke brand Tong style meter, was verified to be 165 amps. See digital photo included in the body of this report for general information.

Weld Repairs E123.5-E2.1- BF-1

The QA inspector at random observed non-critical repair (no RWR required) being performed by ABF welding personnel Wi Kit Lia on Floor Beam Splice E123.5-E2.1 BF- at the following location:

Y=210mm, D=14mm, W=20mm, L=110mm (R2)

This QA Inspector observed Wi Kit Lia using the Carbon Arc Gouging process to remove defects at the above-mentioned locations on the Floor Beam Splice. The locations and depth of the defects had been marked on the steel by the Ultrasonic Technician at the conclusion of his testing. At the end of gouging operations Mr. Lia ground the excavations to a bright clean metal condition in preparation of Visual and Magnetic Particle Testing.

Prior to welding Quality Control Technician Sal Merino performed Visual and Magnetic Particle Testing on the above excavations. This Quality Assurance Inspector verified the results of the test by doing duplicate testing to the excavations. No indications were noted.

The welder spent the remainder of the shift depositing the root passes and fill passes with approximately 80% being completed at the end of the shift. QC inspector Sal Merino was noted to be present in order to monitor the progress and ensure the welding was within the established Welding Procedure Specification (WPS) noted as ABF-WPS-D15-1001 and supporting Procedure Qualification Records (PQR). Prior to initiating the welding at this location the QC inspector observed the preheat temperature, using a Raytek non-contact Thermometer, was sufficient and compliant to the above-mentioned WPS. Using a Tempil Stick, (temperature indicating crayon)the preheat and interpass temperature was then verified by this QA inspector to be greater than 150F and the parameters, using a Fluke brand Tong style meter, was verified to be 172 amps.

Weld Repairs E122.54-E2.1-BF-1

The QA inspector from time to time observed non-critical repair (no RWR required) being performed by ABF welding personnel Gue Wu Chen (1556) on Floor Beam Splice E122.5-E2.1 BF-1 at the following location:

Y=60mm, D=25mm, W=40mm, L=240mm (R2)

This QA Inspector observed Mr. Chen using the Carbon Arc Gouging process to remove defects at the above-mentioned locations on the Floor Beam Splice. The locations and depth of the defects had been marked on the steel by the Ultrasonic Technician at the conclusion of his testing. At the end of gouging operations Mr. Chen ground the excavations to a bright clean metal condition in preparation of Visual and Magnetic Particle Testing.

Prior to welding Quality Control Technician Sal Merino performed Visual and Magnetic Particle Testing on the above excavations. This Quality Assurance Inspector verified the results of the test by doing duplicate testing to

the excavations. No indications were noted.

The welder spent the remainder of the shift depositing the root passes and fill passes with approximately 80% being completed at the end of the shift. QC inspector Sal Merino was noted to be present in order to monitor the progress and ensure the welding was within the established Welding Procedure Specification (WPS) noted as ABF-WPS-D15-1001 and supporting Procedure Qualification Records (PQR). Prior to initiating the welding at this location the QC inspector observed the preheat temperature, using a Raytek non-contact Thermometer, was sufficient and compliant to the above-mentioned WPS. Using a Tempil Stick, (temperature indicating crayon)the preheat and interpass temperature was then verified by this QA inspector to be greater than 150F and the parameters, using a Fluke brand Tong style meter, was verified to be 156 amps.

Magnetic Particle Testing of K Barrier W2-SB27-002, and E5-SB22A-001

This QAI performed Magnetic Particle Testing (MPT) on the two above-mentioned barrier walls. The base of the barrier walls has been modified and welded. See attached pictures for location clarification, and Magnetic Particle Testing report for further technical details. No rejectable defects were found.

Summary of Conversations:

There were general conversations with Quality Control Inspector Fred Michaels, at the start of the shift regarding the location of welding, inspection personnel scheduled for this shift. All observations were relayed to Danny

Reyes and Bill Levell.

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:	Daggett,Matt	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer