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

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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: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-026058
Date Inspected: 10-Aug-2011

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: Job Site

CWI Name: See Below

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girder & Tower

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration (CJP). The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process.

A). OBG E11/E12

Later in the shift the QAI observed the welder, Hua Qiang Hwang ID-2930, performed the CJP groove welding on the longitudinal stiffener field splice identified as WN: 11E-12E-A-LS5. The welder utilized the SMAW process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1012-3, Rev.0 and was also utilized by the QC inspector Fred Von Hoff as a reference. The amperage was recorded as 125 amps and the minimum preheat of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was verified.

The welding was performed in the vertical (3G) position with the work placed in an approximately vertical plane and the groove approximately vertical. The welder utilized a slag hammer, pneumatic air gun with an attached chisel and a wire wheel attached to a 4" high cycle grinder to remove slag and any other non-metallic inclusions after deposit of each fill pass. The electrodes were stored in electrically heated, thermostatically controlled oven after removal from sealed containers. The exposure limits of the electrodes identified as E9018-H4R and the minimum storage oven temperature of 250 degrees Celsius appeared to be in compliance with the contract documents.

B). Lifting Lug Hole

The QAI observed the CJP welding of the lifting lug holes located on the east Orthotropic Box Girders (OBG) and identified as WN: 10E-PP80-E3-W1 and W3. The welding was performed by Salvador Sandoval ID- 2022 utilizing the WPS identified as ABF-WPS-D15-1110A, Rev. 1. The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the production welding utilizing the WPS as a reference. The welding parameters were noted by the QC inspector and verified by the QAI as 129 amps. The inspection performed by Fred Von Hoff appeared to comply with the contract specifications. The welding of the lifting lug holes was not completed during this scheduled shift.

C). Tower Shear Plates

This QAI was informed on this date by Structures Representative, Douglas Wright, that the Request for Weld Repair Approval was verbally approved in regards to the ESW weld identified as WN: N-045 located at the joint identified as "E".

The QAI observed the R1 cycle repair welding of the ESW identified as N-045. The welding was performed by Richard Garcia ID-5892 utilzing the WPS identified as ABF-WPS-D15-1000 Repair, Rev. 2. The WPS was also used by the QC inspector John Pagliero as a reference during the monitoring of the welding and the verifying of the welding parameters. The minimum preheat temperature of 140 degrees Celsius and the maximum interpass temperature 230 degrees Celsius appeared to comply with contract specifications. The welding was performed in the vertical (3G) position with the work in an approximate vertical plane with the groove approximately vertical. The welding was not completed during this shift.

The QAI also observed the base metal repair welding located at joint "R" above the shear plate ESW identified as WN: E-041. The welding was performed by Jeremy Dolman ID-5042 utilizing the SMAW as per the WPS identified as ABF-WPS-D15-1000-Repair, Rev. 2. The welding was performed in the horizontal (2G) position with the work placed in an approximate vertical plane with the groove approximately horizontal. The minimum preheat of 140 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract specifications. The QAI also observed the QC inspector, John Pagliero, monitor the welding and verifiy the welding parameters utilizing the WPS as a reference to perform this task. The welding parameters of 117 amps were noted by the QC inspector and verified by the QAI.

The QAI observed the QC inspector monitoring the welding operation and verifying the welding parameters at random intervals during the scheduled shift. The welding was not completed during the QAI's presence and the work appeared to comply with the contract specifications.

D). Flame Cut Bevel of the East Shear Plate

At the request of the QC inspector John Pagliero, the QAI verified the dimensions and the surface condition of the Partial Joint Penetration (PJP) of the 80 mm to 100 mm thick east shear plate. At the conclusion of the verification task no rejectable conditions were noted at this time and appeared to comply with the contract documents.

This QA Inspector also performed a daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

QA Summary

The welding was performed in the flat and horizontal positions utilizing the E7018-H4R. The 3.2 mm H4 electrodes were stored in electrically heated, thermostatically controlled oven after the removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photograph below illustrate some of the work observed during this scheduled work date.

Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection and N.D.E. testing personnel scheduled for this shift.

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:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer