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

Report No: WIR-027182
Date Inspected: 11-Feb-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: 1530
Location: Job site

CWI Name: C. Storer, S. Merino, F. Von Hoff

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

Bridge No: 34-0006
Component: OBG 13/14 W and 13/14E

Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Robert A. DeArmond was present at the San Francisco Oakland bay Bridge job site at Yerba Buena Island to observe erection and welding activities for the San Francisco Oakland Bay Bridge (SFOBB) project. This Quality Assurance Inspector (QAI) observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A) Lifting Lug Holes LLH PP118.5 W3 #3
B) Lifting Lug Holes LLH PP118.5 E4 #4
C) Deck Access Hole DAH 6W PP46.5 W2

A). Lifting Lug Holes (SPCM)

The QAI observed that welder Mike Jimenez, was welding multi-Pass fill and cover pass welds for lifting lug hole; LLH PP118.5 W3 #3. This QAI observed that a copper plate was used as backing for this location as defined in Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU. The QC inspector Salvador Merino verified the fit up for this location and found it to be acceptable, this information was relayed to the QAI. The welder then continued pre-heat throughout the area during welding using a propane type weed burner at 40 degrees Celsius (150 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was using the Shielded Metal Arc Welding (SMAW) electrode E7018 for the Complete Joint Penetration (CJP) weld in the flat (1G) position with 4.8 mm electrode for the fill pass with 286 amps and 3.2 mm electrode for the cover pass with 158 amps. The welder utilized a power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Salvador Merino and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time METS observation was

performed. No issues were noted by the QAI.

The welder was grinding the starts and stops between weld layers to a bright metal. The location was still in process at the end of this QAI's shift.

B). Lifting Lug Holes (SPCM)
The QAI observed that welder Salvador Sandoval, was observed preparing the fit-up for lifting lug hole LLH PP118.5 E4 #4. The welder had ground the edges of the hole and was preparing the insert to be fit up. This QAI observed that a copper plate was used as backing for this location as defined in Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU. The QC inspector Fred Von Hoff verified the fit up for this location and found it to be acceptable, this information was relayed to the QAI. The welder then pre-heated the area prior to welding using a weed burner at 40 degrees Celsius (150 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was using the Shielded Metal Arc Welding (SMAW) using electrode E7018 for the Complete Joint Penetration weld in the flat (1G) position with 3.2mm electrode for the root and hot pass with 151 amps. The welder was using a chipping hammer, power grinder, and power wire wheel for the interpass cleaning. The QC inspector for this location was Fred Von Hoff and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time of the observations no issues were noted by the QAI.

The welder was grinding the starts and stops between weld layers to a bright metal. The location was still in process at the end of this QAI's shift.

C). Deck Access Hole (DAH) 6W PP46.5 W2
The QAI observed that welder Jason Collins and Todd Jackson was welding the radius section of the Deck Access Hole, DAH 6W PP46.5 W2. This QAI observed these parameters as defined in Welding Procedure Specification (WPS) ABF-WPS-D15-3031-1. The QC inspector Chuck Storer verified the fit up for this location and found it to be acceptable, this information was relayed to the QAI. The welder then continued pre-heat throughout the area during welding using a propane type weed burner at 40 degrees Celsius (150 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was using the Flux Cored Arc Welding (FCAW) electrode E71T-1M/T-9M for the Complete Joint Penetration (CJP) weld in the flat (1G) position with 1.6 mm wire. The welding parameters were verified as 256 amps, 23.1volts and 1.12 k/j Heat index. The welder utilized a power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Chuck Storer and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time METS observation was performed. No issues were noted by the QAI.

QA Observation and Verification Summary
The QA inspector observed the QC activities and the welding utilizing the WPS's as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspectors utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The consumables utilized for the welding process stated appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

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Unless noted otherwise, all work observed on this date appeared to be in general compliance with the contract documents at the time of observations.

Summary of Conversations:

As mentioned above between QA and QC concerning this project

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:	DeArmond,Robert	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer