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-027564
Date Inspected: 01-May-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: 1730
Location: Job site

CWI Name: Bernaed Docena

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: Tower

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) OBG Drop-In Plates E2.1 5500~6500 mm
B) OBG Drop-In Plates E2.2 2000~1500 mm
C) Tower Skin Plate A and B to Shear Plate at 9-Meter Ultrasonic Testing

A). OBG Drop-In Plates E2.1 5500~6500 mm (SPCM)
The QAI observed that welder Kit Lounechany, was welding root pass for Drop-In Plates E2.1 5500~6500 mm. This QAI observed that a copper plate was used as backing for this location as defined in Welding Procedure Specification (WPS) ABF-WPS-D15-1040C-CU. The QC inspector Bernard Docena 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. 0 mm electrode with 179 amps. The welder utilized a power grinder and power wire wheel for the inter-pass 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). OBG Drop-In Plates E2.2 2000~1500 mm (SPCM)
The QAI observed that welder Eddie Brown, was welding root pass for Drop-In Plates E2.2 2000~1500 mm. This QAI observed that a copper plate was used as backing for this location as defined in Welding Procedure Specification (WPS) ABF-WPS-D15-1040C-CU. The QC inspector Bernard Docena 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 with 261 amps. The welder utilized a power grinder and power wire wheel for the inter-pass 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.

Ultrasonic Testing (UT)
This QAI inspector performed UT of indications previously tested and rejected as well as indications designated as recordable, by Smith-Emery Quality Control personnel. This QA Inspector generated a UT report for recordables as designated by Smith-Emery Quality Control personnel for this date. The member(s) is/are identified as weld No. W-042 (M), tower skin plate A and B to 60mm Shear Plate, elevation 9-meters. Following is a summary of location, length, depth, and classification of weld that was rejected by Smith-Emery Quality Control personnel and additionally tested and recorded by this QAI.

Weld No. W-042 (M), Tower Skin Plate A and B to 60 mm Shear Plate at 9-meters
Weld Process: ESW
Face B
Y+ 6530 Length: 75mm, Depth: 42mm CL. -2
Y+ 6740 Length: 50mm, Depth: 42mm CL. +3
Y+ 7030 Length: 190mm, Depth: 41mm CL. +2
Y+ 7300 Length: 40mm, Depth: 43mm CL. +2
Y+ 7390 Length: 110mm, Depth: 42mm CL. +2
Y+ 8290 Length: 200mm, Depth: 42mm CL. +1
Y+ 8560 Length: 140mm, Depth: 28~32mm CL. +1
Y+ 9200 Length: 80mm, Depth: 39~42mm CL. +1

Weld No. W-042 (M), Tower Skin Plate A and B to 60 mm Shear Plate at 9-meters
Weld Process: ESW
Face B

Y- 9210 Length: 65mm, Depth: 40mm CL. +4
Y+ 8310 Length: 170mm, Depth: 26mm CL. +3
Y+ 7260 Length: 510mm, Depth: 28mm CL. -2
Y+ 7040 Length: 220mm, Depth: 30mm CL. +4
Y+ 6550 Length: 70mm, Depth: 21mm CL. +3

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 inter-pass 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. 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