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 #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-001036
Date Inspected: 23-Dec-2007

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 730
Location: Shanghai, China

CWI Name: Lu Lefeng

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: Caltrans Mock-Up

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector, Ken Jobes, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, to randomly monitor welding and Quality Control (QC) functions. While on site, the QA Inspector observed and/or discovered the following:

The Caltrans QA Inspector randomly observed the machine Submerged Arc Welding (SAW) on the Lower Shaft Assembly of the 114M Mock-Up, Weld No. MUC-MA107 B/C-3A. This is the outside weld of Skin B to Skin C. This is a complete joint penetration (CJP) groove weld and was being welded in the flat groove (1G) welding position. The welding operator was Xu Xiushui (I.D. No. 040489), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. Welding Procedure Specification (WPS) WPS-B-T-2221-C-U2b-S was being used for this weld. ZPMC CWI, Xu Lefeng (CWI No. 07031411) was present during this welding as was Bureau Veritas Inspector, Li Wen Shang. The QA Inspector also noted that ZPMC's documentation of minimum/maximum preheat/interpass temperatures, voltage, amperage and travel speed by the CWI were within the specified ranges of the WPS for the passes welded during the time of observation. The QA Inspector also randomly measured the above four parameters by use of a calibrated Fluke amp/volt meter for amperage and voltage, temperature indicating crayons for preheat/interpass temperature, and a tape measure and stop watch for travel speed.

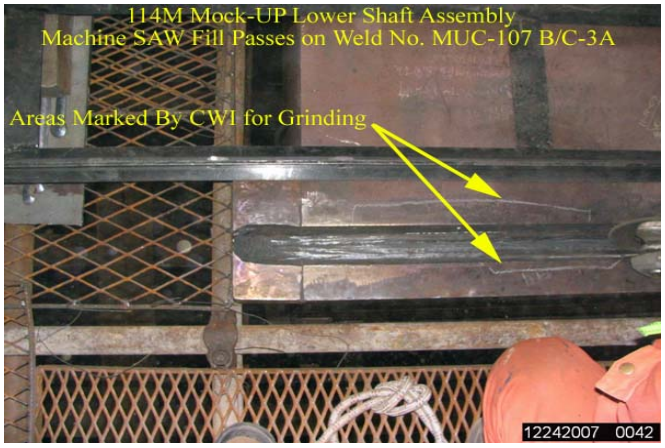
The Caltrans QA Inspector also randomly observed the manual Shielded Metal Arc Welding (SMAW) of tack welds joining plate stiffeners, Piece Mark X2K (Dwg. X2), to Floor Beam 15 (Dwg. FB15) in the horizontal fillet (2F) welding position. The QA Inspector determined from Drawing No. FB15A that all base material is specified as ASTM A709-50 (345). The Weld Nos. were FB015-04-21, 22 (opposite sides of X2K). The tack welder was

Wang Changfa (I. D. No. 058102), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. The QA Inspector observed that the electrode being used to tack was TL-508 (E7018).

The Caltrans QA Inspector also randomly observed the manual Shielded Metal Arc Welding (SMAW) of tack welds joining plate stiffeners, Piece Mark X2F (Dwg. X2), to Floor Beam 7 (Dwg. FB7) in the horizontal fillet (2F) welding position. Piece Mark X2E had already been tacked to Floor Beam 7. The QA Inspector determined from Drawing No. FB7 that all base material specified as ASTM A709-50 (345). The Weld Nos. were FB007-05-015-11, 12, 15 and 16 (opposite sides of X2E and X2F). The tack welder was Ren Jinzhu (I. D. No. 044837), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. The QA Inspector observed that the electrode being used to tack was TL-508 (E7018).

The Caltrans QA Inspector also randomly observed the semi-automatic flux cored arc welding (FCAW) of tack welds joining WT stiffeners, Piece Mark RS17A (Drawing RS17) to Side Plate 21 (Drawing SP21). The weld Nos. were SP-021-01-20, 21. The portion being tacked is not specified as SPCM and therefore the minimum preheat required is 110° C. Portions of the same stiffeners welded to the same side plate are specified as SPCM. See the attached picture for illustration. The minimum preheat/interpass temperature for that portion is specified on the WPS to be 160° C. The WPS No. is WPS-B-T-2132-2. The tack welder was He Yi Mei (I. D. 048625), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. The QA Inspector observed that ZPMC CWI, Xu Xianping (AWS CWI No. 07072071) was present during this welding. Tack welding had been done prior to this random observation on Weld Nos. 14, 15, 22, 23, 24, and 25.

All observations appeared to meet the requirements of the job specifications.



Summary of Conversations:

As identified within the contents of this report.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Jobes,Kenneth	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer