

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000541**Date Inspected:** 30-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 2330**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 800**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Huang Li & Xu Lefeng**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:** Caltrans Mockup**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M and 114M, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Item	Description	WBS	Dwg No.	Status
1	Skin Plate D (lower) Mock-Up 114M, Skin Plate D (upper): Caltrans QA Inspector witnessed ZPMC Quality Control technician, Mr. Cai Xinxin perform magnetic particle test (MT) at complete joint penetration (CJP), weld repair backgouge. The locations were identified as stiffener plate mp1004-2, mp1004-3, weld map weld number 5 and 8 to skin plate MA113. The length of the weld repair excavation area measured 530 mm for weld 5 and 540 mm for weld 8. The weld repairs were inspected and found to be in compliant with the project specifications by ZPMC. Caltrans QA Inspector observed that the backgouges appeared to be ground smooth and to bright metal.	NA	NA	ZPMC MT
2	Skin Plate D (lower) Mock-Up 114M, Skin Plate D (lower section): Caltrans QA Inspector observed flux cored arc welding (FCAW) in progress at stiffener plate, mp1008, weld number 13 and 14 to skin plate MA110, partial joint penetration (PJP), double bevel T-joint weld. The welder was observed welding root pass weld in the horizontal position. The welder is identified as Mr. Jiang Zhou, welder stamp 040261. The welder is using welding procedure specification WPS-B-T-2332-TC-P5-F, Revision 0. Caltrans QA Inspector observed ZPMC Quality Control (QC) Certified Welding Inspector (CWI) Mr. Xu Lefeng and Bureau Veritas inspector, Mr. Huang Li monitoring welding activities at the workstation. Caltrans QA Inspector measured current welding parameters at approximately 300 amps, 31.5 volts and 300 millimeters per minute (mm/min) travel speed. Preheat and interpass temperatures were verified during	NA	NA	ZPMC MT in Progress

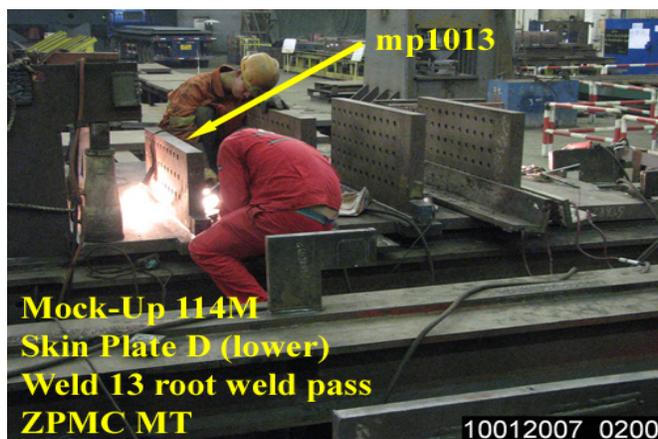
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welding activities. The preheat temperature prior to the start of welding measures more than 110 Celsius (230 degree Fahrenheit) but less than 232 Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. FCAW consumable is verified and identified as Supercored 71H, classification E71T-1, diameter 1.4 mm (.055 inches).

Caltrans QA Inspector witnessed ZPMC QC non-destructive testing technician, Mr. Cai Xinxin perform magnetic particle test (MT) and Visual Test (VT) inspection of the root weld passes. The weld repairs were found to be in compliant with the project specifications by ZPMC. The MT testing appeared to be in general conformance with AWS D1.5 2002 requirements.

Caltrans QA Inspector performed MT and VT inspection of the root pass weld. See Caltrans Magnetic Particle Test Report, TL6028, generated on this date for additional information. The following digital pictures illustrate ZPMC MT in progress.



3 Skin Plate E (upper) NA NA Work in Progress

Mock-Up 114M, Skin Plate E (upper): Caltrans QA Inspector witnessed ZPMC Quality Control technician, Mr. Cai Xinxin perform magnetic particle test (MT) at complete joint penetration (CJP), weld repair backgouge. The locations were identified as stiffener plate mp1010, mp1013, weld map weld number 8 and 3 to skin plate MA106. The length of the weld repair excavation area measured 70 mm for weld 8 and 535 mm for weld 3. The weld repairs were inspected and found to be in compliant with the project specifications by ZPMC. Caltrans QA Inspector observed that the backgouges appeared to be ground smooth and to bright metal.

Caltrans QA Inspector observed flux cored arc welding (FCAW) at stiffener plate repair weld, weld map weld number 8 and 3. The welders are identified as Mr. Jiang Zhou, welder stamp 040261 and Mr. Bai Wen Ming, welder stamp 040434. The welders are using welding procedure specification WPS-345-FCAW-2G (2F)-Repair, Revision 1. Caltrans QA Inspector observed ZPMC Quality Control (QC) Certified Welding Inspector (CWI) Mr. Xu Lefeng and Bureau Veritas inspector, Mr. Huang Li monitoring welding activities at the workstation. Caltrans QA Inspector measured current welding parameters at approximately 300 amps, 32.0 volts and 305 millimeters per minute (mm/min) travel speed. Preheat and interpass temperatures were verified during welding activities. The preheat temperature prior to the start of welding measures more than 160 Celsius (320 degree Fahrenheit) but less than 232 Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. FCAW consumable is verified and identified as Supercored 71H, classification E71T-1, diameter 1.4 mm (.055 inches). Following digital picture illustrates welding in progress.

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4 Skin Plate E (lower) NA NA ZPMC MT

Mock-Up 114M, Skin Plate E (lower): Caltrans QA Inspector witnessed ZPMC Quality Control technician, Mr. Cai Xinxin perform magnetic particle test (MT) at complete joint penetration (CJP), weld repair backgouge. The locations were identified as stiffener plate mp1010, weld map weld number 2 to skin plate MA108. The length of the weld repair excavation area measured 70 mm for weld 2. The weld repair was inspected and found to be in compliant with the project specifications by ZPMC. Caltrans QA Inspector observed that the backgouge appeared to be ground smooth and to bright metal.

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: Hasler, Mike Quality Assurance Inspector

Reviewed By: Cuellar, Robert QA Reviewer