

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-000511**Date Inspected:** 13-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Lu Jian Ping**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:** N/A**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication of the Mock-up 77, 89 and 114 meters elevations scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Tower Mock-up 114 Meters elevation

The QA inspector performed random dimensional inspections to the assembly MA112. The QA inspector verified bevel angle, depth of preparation and length. The QA inspector found that dimensions appeared to be in compliance with the contract documents.

The QA inspector witnessed the ZPMC Magnetic particle Testing (MT) verification on the root pass from the skin upper panel C weld joint # 5, 6, 7, 8, 9, 11 and 12. The QA inspector observed MT ASNT Level II technician Zhou Donyun performing MT verifications. The QA inspector observed that Mr. Zhou's MT verifications appeared to be in compliance with the Contract documents.

The QA inspector performed 10 % MT verification on the root pass from the skin upper panel C weld joint # 5, 6, 7, 8, 9, 11 and 12. The QA inspector observed that the weld examined appeared to be in accordance with the contract documents. See TL 6028 generated on this date.

The QA inspector witnessed ZPMC Quality Control inspector E Shuiqin and Li Li Ming performing Ultrasonic testing at the junction of the skin B and longitudinal stiffeners mp1009 and mp1006 joint # 3 and 6 lower and upper panels. The QA inspector observed that Ms. E and Mr. Li recorded on the steel six (6) rejectable indications.

The QA inspector observed that the UT verifications performed by Ms. E and Mr. Li appeared to be in general compliance with AWS D1.5 2002. Mr. Li and Ms. E found 4 rejectable indications at skin B upper panel, 2

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defects on each longitudinal stiffeners mp1006 and mp1009 and 1 defect on each longitudinal stiffeners mp1006 and mp1009. The QA inspector had a conversation with ABF representative Chang Wei with Bureau of Veritas. The QA inspector brought to the attention of Mr. Chang that Ms. E and Mr. Li were not marking on the steel the rating and locations of the rejectable indications as per contract documents. Mr. Chang agreed to the QA inspector and relayed that he would convey to ZPMC QA supervisors that ZPMC marking of the UT defects did not fully comply with the contract documents. The photos show Ms. E performing UT evaluation.

The QA inspector witnessed the ZPMC Magnetic particle Testing (MT) verification on the base metal repair located by the shop splice at the junction of the diaphragm plates S-95 and p555 weld joint # 73. The QA inspector observed MT ASNT Level II technician Cai Xin Xin performing MT verifications. The QA inspector observed that Mr. Cai MT verifications appeared to be in compliance with the Contract documents.

ZPMC, welder Zhan Binghua was observed by the QA Inspector performing welding operations on the skin panel A. Mr. Zhan was observed welding the weld repairs at the junction of the mp2 to skin panel A, joint # 2 following the approved welding procedure specification WPS-345-FCAW-1G-Repair. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding (FCAW) process in the flat (1G) position with the 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA Inspector verified amperage, voltage, travel speed, preheat and heat interpass temperatures for the filler passes. The QA inspector found that the welding parameters recorded after ZPMC approved Certified Welder Inspector Ye Yong Jun and CAWI Zhu Zhong Hai appeared to be in accordance with the contract documents.



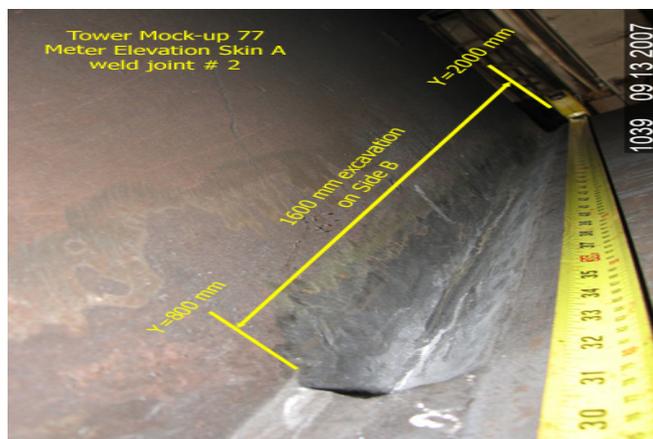
Item	Description	WBS	Dwg No.	Status
1	Base Metal repair on Diaphragm SA-95 Tower Mock-up 77 Meter Elev. The QA inspector observed that ZPMC was performing Magnetic particle Testing (MT) verification on the excavated area for the base metal repair located at the shop splice at the junction of the diaphragm plates S-95 and p555 weld joint # 73. The QA inspector observed MT ASNT Level II technician Cai Xin Xin performing MT verifications. The QA inspector observed that Mr. Cai's MT verifications appeared to be in compliance with the Contract documents. Note: ZPMC would wait 72 hours (after the weld cools down to the ambient temperature) to perform final MT examination to the weld repair.			

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- 2 Tower 77 Meters Elevation Skin A and E UT weld repairs
- The QA inspector had a conversation with Senior Task Leader David McClary and Structures Material Representative (SMR) Ryan Smith. Mr. Smith relayed to the QA inspector that ZPMC found defects by UT examination that were greater than 10 % of the cumulative length of the weld joints which exceeded the maximum cumulative length of the defect found on the Mock-up per special provisions.



Summary of Conversations:

As noted above.

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: Acuna, Alfredo

Quality Assurance Inspector

Reviewed By: Cuellar, Robert

QA Reviewer