

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: 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-000936**Date Inspected:** 21-Nov-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**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:** Ye Yong Jun, Li Wen Sheng**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 mock up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Dan Hernandez was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-ups 77M 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 77M Diaphragm			In Progress

Caltrans QA Inspector observed Shielded Metal Arc Welding (SMAW) in progress of fill passes on diaphragm web plate p575 to diaphragm plate SA95. The weld joint is a Partial Joint Penetration (PJP) double bevel T-joint in the 2G position. The approved welders Xu Wei #066253, Ma Zhiyong #066019, Yang Lei #040690 and Zhai Qingshan #058026 were using approved welding procedure specification WPS-B-T-3312-TC-P5. Caltrans QA Inspector measured current welding parameters at approximately 260, 245, 245, 245 amps, 25, 24, 24, 26 volts and 153, 146, 155, 150 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 110 Celsius (230 degree Fahrenheit) but less than 232 Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. SMAW welding consumable is verified and identified as classification E9018 H4R Excalibur 4mm diameter. An electrode oven was observed by Caltrans QA Inspector in use during the welding process. ZPMC Quality Control (QC) Certified Welding Inspector (CWI) Mr. Ye Yong Jun and Bureau Veritas Inspector Mr. Zhang Xu Liang were observed monitoring welding activities at the work station.

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- 2 114M Longitudinal Stiffener plate to Interior Splice Assembly In Progress

Caltrans QA Inspector observed flux cored arc welding (FCAW) in progress of stiffener plate p920-9 to A67. The weld joints are Complete Joint Penetration (CJP), double bevel T-joints. The welder was observed welding filler passes in the 1G position using a chipping hammer and wire brushing during interpass weld cleaning. The approved welder is identified as Mr. Chang Chuan Cang using welding procedure specification WPS-B-T-2231-TC-U5-F. Caltrans QA measured current welding parameters at approximately 310 amps, 30.7 volts and 291 millimeters per minute (mm/min). Preheat and interpass temperatures were verified during 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 welding consumable is verified and identified as Supercored 71H, classification E71T-1, diameter 1.4 mm (.055 inches).



## Summary of Conversations:

### 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.

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**Inspected By:** Hernandez,Dan

Quality Assurance Inspector

**Reviewed By:** Cuellar,Robert

QA Reviewer