

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-000744**Date Inspected:** 27-Oct-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Ye Yong Jun & Li Gang**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:**

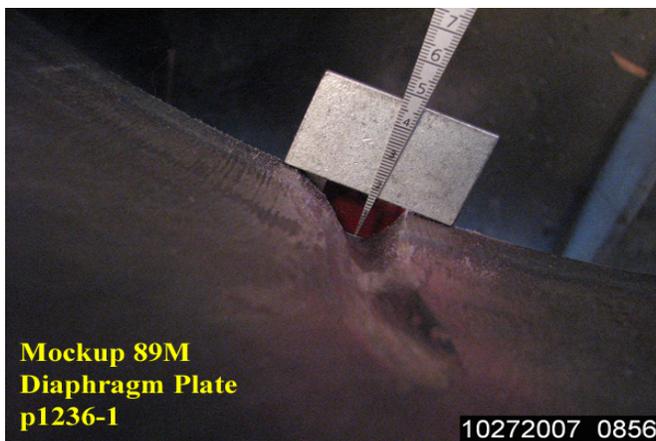
Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fit up, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M, 114M and U-Rib Trial Assembly, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery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

Item	Description	WBS	Dwg No.	Status
1	Skin Plate C Mock-Up 89M, Skin Plate C: Caltrans QA Inspector observed submerged arc welding (SAW) in progress at complete joint penetration plate splice weld, identified as weld number 26. The welder operator is identified as Ms. Gu Caihong, welder stamp 053748, welding fill pass weld in the flat position. The welder is using welding procedure specification, WPS-B-T-2221-B-U3c-S, Revision 0. Caltrans QA Inspector measured current welding parameters at approximately 650 amps, 32.0 volts and travel speed, 580 millimeters per minute (mm/min). Preheat and interpass temperatures were verified during welding activities. Preheat temperature prior to the start of welding measures more than 110 degrees Celsius (230 degree Fahrenheit) but less than 232 degrees Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. SAW consumables were verified and identified as JW-3, classification EM12K, diameter 4.8 mm (.189 inches) electrode and, JF-B Flux, classification F7A2.	NA	NA	Welding in Progress
2	Diaphragm Plate Mock-Up 89M, SA13 (p1236-1) Diaphragm Plate: ZPMC QC Inspector, Mr. Fu Yu hong informed Caltrans QA Inspector that ZPMC would be performing magnetic particle testing (MT) in the tower shop. Caltrans QA Inspector witnessed ZPMC QC, Mr. Cai Xin Xin perform MT inspection at access opening ring, partial joint penetration (PJP) weld joining ring to the diaphragm plate. Caltrans QA Inspector observed that the area to be MT appeared to have an area on the plate that had something removed by grinding. This ground area started at the plate edge and transverse	NA	NA	Pending Caltrans Approval

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the PJP weld. The length and depth of the material removal area measured 11 to 6 mm deep and 80mm in length. Caltrans QA Inspector asked Mr. Fu Yu hong if he had a Caltrans engineering approval to perform welding repair of the material excavation area. Mr. Fu Yu hong stated that no one informed him that a Caltrans approval was needed. Mr. Fu canceled the MT inspection and stated that ZPMC would notify ABF of this weld repair, pending ABF resolution. Following pictures illustrate location requiring repair welding at the access opening ring.

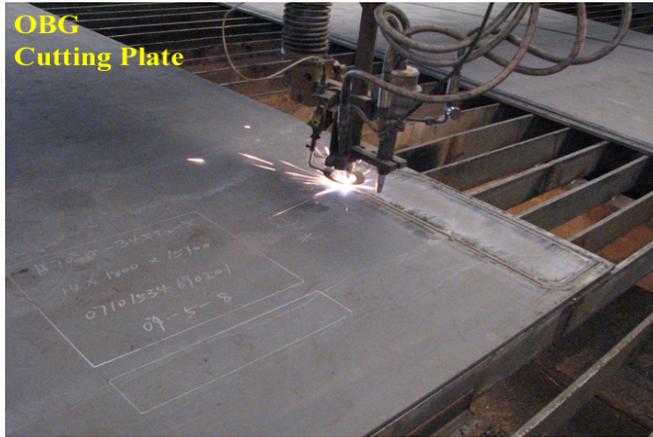


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|---|-------------------|----|----|----------------------------|
| 3 | Diaphragm Plate | NA | NA | Heat Straightening |
| Mock-Up 77M, Diaphragm Plate, Flange Reinforcement Ring: Caltrans QA Inspector observed ZPMC perform heat shaping of the bottom diaphragm flange reinforcement ring, sub assembly SA273. ZPMC QC inspector, Mr. Lei Tao stated that the heat straightening is being performed in accordance with HSRI-(CT)-009 and/or 010 requirements. This procedure was reviewed and appears to verbally approved 10-26-07, by Caltrans Task Leader, Mr. David McClary. Caltrans QA Inspector witnessed flange section being heated to 550 degrees Celsius. ZPMC then applied pressure to each side of the ring with the use of two hydraulic jacks, one mounted on each side of the shaped ring section. The part was then allowed to cool to 100 degrees Celsius then the pressure was released. Flange section is then placed in the diaphragm and measured for fit. The heat straightening procedure calls out 2 to 3 applications and the ZPMC QC inspector, Mr. Chen Tan stated that this was the first application. The heat straightening appeared to be in conformance with the approved procedure. | | | | |
| 4 | OBG Cutting Plate | NA | NA | Plate ID and flame cutting |
| Caltrans QA Inspector observed ZPMC oxy-fuel flame cutting plate nesting at Mockup Shop #2, burn table. The plate nesting consisted of small parts identified as X3-X3N (80 pieces), X3-X3L (80 pieces), X3-X3M (80 pieces), and X3-X3K (132 pieces). The plate was identified as A709M-345T2-X, 14mm X 1800mm X 15100mm, plate batch | | | | |

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number 071015346902. Following digital pictures illustrates plate material identification and oxy-fuel flame cutting in progress.



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
