

**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-000649**Date Inspected:** 10-Oct-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Lu Jian Hua**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:** Tower Mock-up 77, 89 and 114 & OBG**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 Splice Mock-up 114 Meter Elevation**

The QA inspector observed ZPMC performing weld repairs at the weld joint # 1 and 2, from the B side, at the internal corner plate A-116. The digital photo below shows ZPMC performing weld repairs at the above mentioned location.

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Item	Description	WBS	Dwg No.	Status
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1	<p>Tower Mock-up 77 M Skin D, Weld terminations.</p> <p>The QA inspector had a conversation with ABF representative Mr. Chang Wei with Bureau of Veritas. The QA inspector asked Mr. Chang Wei regarding the terminations located at the junction of the connection plate and the longitudinal stiffeners at the Skin D. These weld terminations have small groove notches that are not indicated on the approved drawings. Prior to responding back to the QA inspector, Mr. Chang Wei discussed this issue with ZPMC representatives from the Technical Department. Mr. Chang Wei relayed to the QA inspector that the design drawings do not detail how ZPMC is required to terminate the joint and ZPMC technical department's position was that these terminations were acceptable. Mr. Chang Wei added that he would discuss the present conditions with ABF representatives. After, Mr. Chang Wei discussed with ABF Supervisor Mr. Kevin Carpenter. Mr. Kevin Carpenter relayed to him that he agreed with ZPMC; and that the condition of the termination were acceptable. The photographs below show the location of the termination after welded. Note: The terminations have not been ground.</p>			
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2	<p>Tower Mock-up 89 M</p> <p>The QA inspector observed ZPMC performing oxyfuel gas cutting operations at the skin A for the sub-assembly MA-21. See digital photograph below.</p> <p>ZPMC fabrication on the Tower Mock-up was observed as following:</p> <ul style="list-style-type: none"><li>Skin D Top shop splice was tack welded.</li><li>Skin C Top shop splices were completed welded</li><li>Skin C Lower shop splices, the welding was in progress.</li><li>Skin E rotation devices were being welded.</li></ul>			
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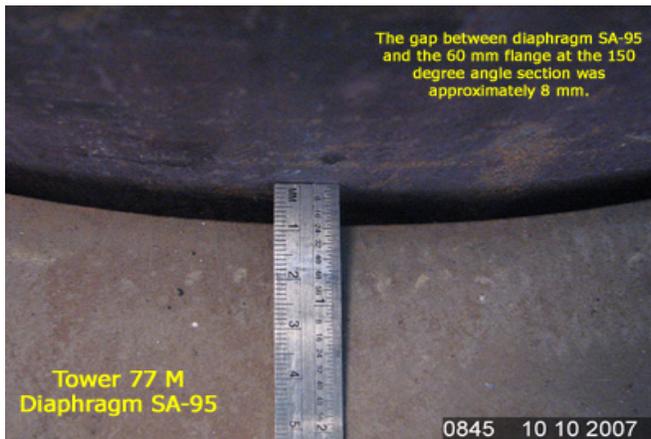
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3 Tower Mock-up 77 M, Dimensional verifications Diaphragm SA-95 and Flanges SA-274

The QA inspector observed that 150 degrees bent flange section SA-273 and the 30 degrees bent flange piece marked p585. The QA inspector observed that the bent flange section p585 had a gap of approximately 3 mm and the bent section SA-273 had a gap of approximately 8 mm. The QA inspector had a conversation with ABF representative Mr. Kevin Carpenter. Mr. Kevin Carpenter relayed that ZPMC stated that the gaps for all the sections appeared to be in accordance with the contract documents. Note: ZPMC did not mark the allowance according with fitting lines at this time. ZPMC representative relayed that ZPMC was performing a preliminary check.



4 ABF welding demonstration

The QA inspector observed ABF representative Danny McDonald performing welding operations on a practice test sample. ABF was doing a demonstration for ZPMC showing Mr. Danny McDonald welding technique at the Tee joint complete joint penetration (CJP) in the horizontal (2G) position. The digital photograph below captures Mr. Danny McDonald performing welding operations on a practice test piece.

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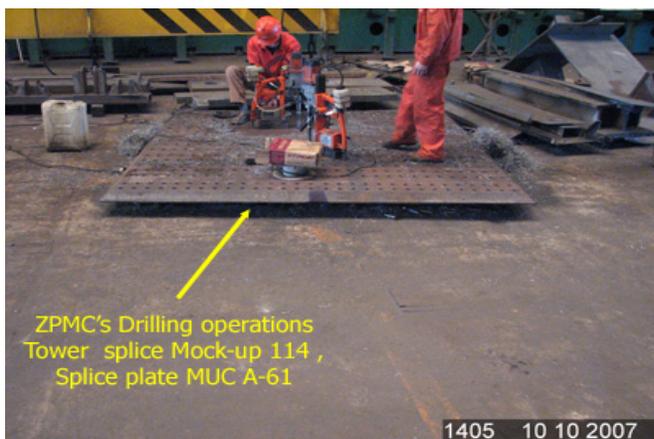
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- 5 Drilling and Cutting Tower Mock-up 114 M and 89 M.

The QA inspector observed ZPMC performing machining operations at the bevels for the Tower Mock-up 89 M and performing drilling operations on the Tower splice Mock-up 114 M piece marked MUC-A61.



- 6 OBG Weld Trial U ribs

The QA inspector observed that ZPMC was performing grinding operations at the U ribs U-95, U-6, U-21, U-41 and U-3.

## 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.

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**Inspected By:** Acuna, Alfredo

Quality Assurance Inspector

**Reviewed By:** Cuellar, Robert

QA Reviewer