

**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-001244**Date Inspected:** 08-Dec-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:** 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:** OBG**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Item Description	WBS	Dwg No.	Status
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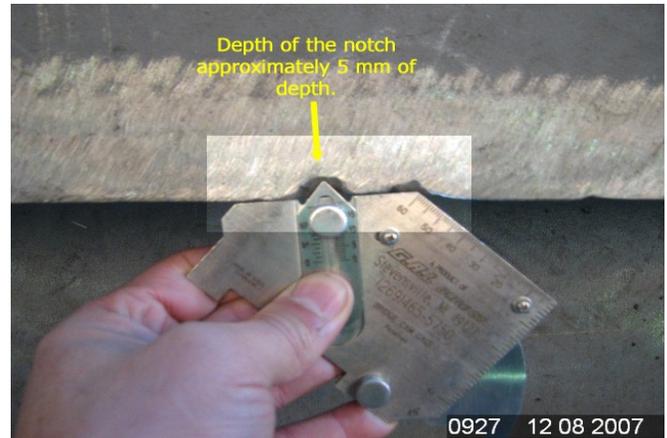
1 OBG Tee stiffeners

The QA inspector observed occasional flame notches at the edges of the split W shapes after oxyfuel gas cutting operations. The QA inspector had a conversation with ZPMC representative Li Xiu Yang. The QA inspector asked Mr. Li Xiu Yang how ZPMC was going to repair the flame notches with less than 5 mm of depth. After asking the ZPMC production personnel, ZPMC representative informed that ZPMC was going to prepare the area by grinding and then welded. The QA inspector recommended ZPMC to follow the contract documents when repairing flame notches by welding.

In previous conversation with Task Leader Jimmy Cochran, the QA inspector brought to the attention of Mr. Cochran that ZPMC was not performing magnetic particle testing (MT) and ultrasonic testing (UT) after welding flame notches with no more than 5 mm of depth at areas that would be subjected to tension or reversal stress (specifically oxyfuel cut edges from the split W shapes at the girder stiffeners). Mr. Cochran informed that the Department would not address shallow notches on the Tee stiffeners with MT and UT after welding.

# WELDING INSPECTION REPORT

( Continued Page 2 of 4 )



## 2 OBG Weld Trail

The QA inspector observed ZPMC performing layout operations to the U-ribs before cutting the test samples from the weld trial.

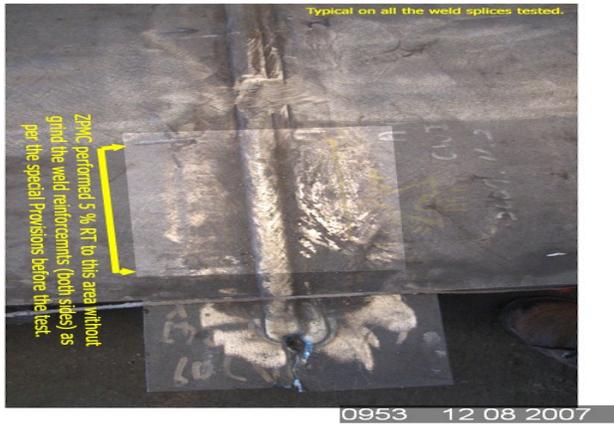


## 3 Grinding before Radiographic testing(RT)

The QA inspector observed that ZPMC did not grind smooth the weld areas subjected to tensile forces before RT. The photograph below show an area after ZPMC performed RT examination. The QA inspector had a conversation with ZPMC representatives Lay Tao and Xu Jun. The QA inspector brought to the attention of Mr. Lay Tao that ZPMC was not grinding the weld reinforcement smooth as per special provision before performing RT testing. ZPMC QC representatives at that time were not aware of the requirement. QA inspector observed that ZPMC performed 5 % RT verifications without grinding smooth the weld reinforcements on the bottom panels BP-1 thru BP-6.

# WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

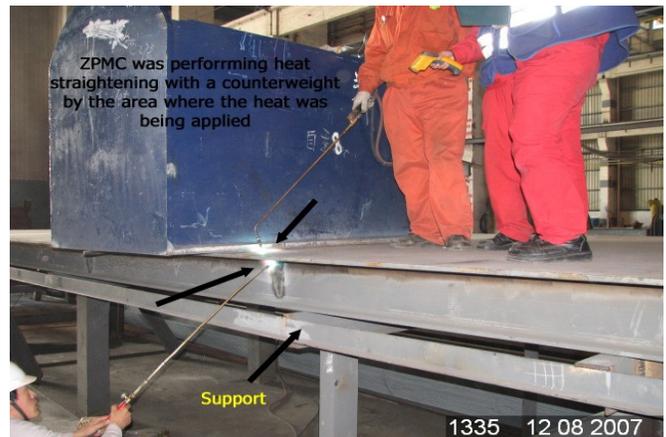
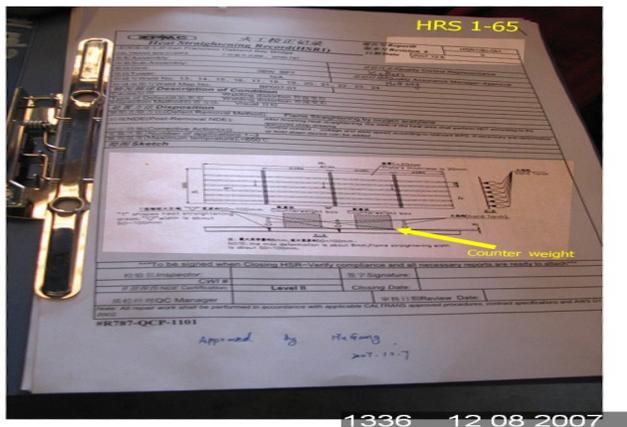


#### 4 OBG Tee Stiffeners Tack welding

The QA inspector observed ZPMC welder Sun Tiyu performing tack welding operations with the flux cored arc welding (FCAW) process at the weld joint BP-002-01-017 (PL-34B, BP-2) bottom plate to Tee stiffeners RS-11F. The QA inspector performed random verifications of the welding parameters. The QA found that the welding parameters appeared to be in general compliance with the contract documents.

#### 7 Heat Straightening operations on the Bottom panel

The QA inspector observed ZPMC performing heat straightening operations at the bottom plate BP-007-01 after welding operations. ZPMC located the bottom plate outside down as shown on the photographs below and added heat with the oxyfuel gas at the Tee stiffeners and the bottom plate. The heat straightening appeared to be performed as per the ZPMC HSR1-65. ZPMC located the bottom panel over a structure which appeared to have enough support to resist during the heat straightening operations the applied load from the two counter weight .



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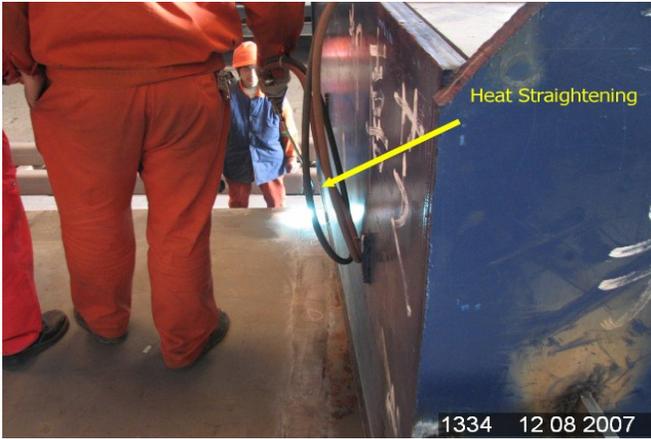
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# WELDING INSPECTION REPORT

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## 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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<b>Inspected By:</b>	Acuna,Alfredo	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer

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