

**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-001408**Date Inspected:** 05-Feb-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**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:** See Below**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 and OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) and Tower Mock Up:

CWI Inspector: Mr. Liz Hijiang

Bay 3

The QA Inspector observed ZPMC personnel installing base material heating elements on bottom plate BP018 to preheat stiffener plate welds BP018-01-013 through BP018-01-024. ZPMC usually installs these heaters prior to making stiffener plate fillet welds. The QA Inspector visually observed welds BP018-01-018 and BP018-01-015 both have locations where the tack welds have been totally removed resulting in 3 mm to 6 mm deep gouges in the base material. The QA Inspector asked ZPMC QC Inspector Mr. Liz Hijiang if ZPMC has issued critical weld repair (CWR) documents to obtain Engineering approval to repair these base material gouges. Mr. Lizjiang said ZPMC needs to issue CWR documents and that ZPMC will not be welding this bottom plate today. The QA inspector observed ZPMC removing heating elements from BP018 welds. The QA inspector observed paint material in area where a fillet weld is to be made on stiffener plate weld BP018-01-014. The QA Inspector informed American Bridge / Fluor Quality Assurance Inspector Mr. David LaRue that base plate BP018 has welds

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with base material gouges and paint material adjacent to where various welds are to be made. Mr. LaRue said he will discuss these issues with ZPMC personnel. See the photographs below showing the gouge location in weld BP018-01-018 and the paint material adjacent to weld where BP018-01-014 is to be made). This QA Inspector issued an incident report to document these base material gouges.

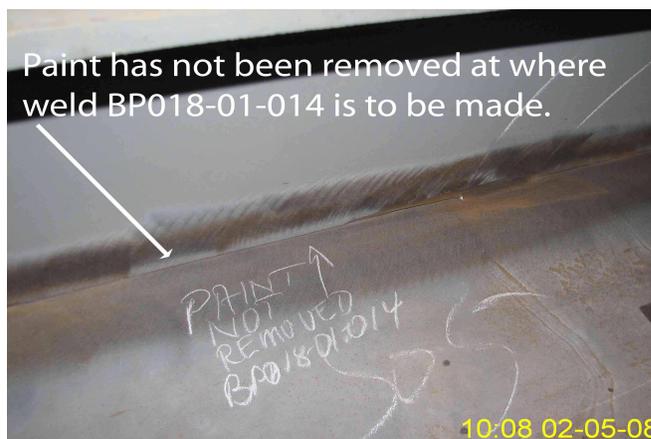
Later in the day Mr. LaRue informed the QA Inspector he has completed informational magnetic particle (MT) inspections of base plate BP018 fillet tack welds and several linear indications have been observed. See the photograph below showing weld BP018-01-019 that has a MT linear indication along the entire length of the fillet tack weld and the bottom plate.

The QA Inspector observed ZPMC QC Inspector Mr. Li Peng Fei performing visual inspections of the tack welds on side plate SP015. Mr. Fei has marked several of the tack welds as needing to be ground. The QA Inspector observed several of these locations have metal chips that had formed linear indications on portions of the tack welds in a similar manner as when magnetic particle inspection powder is attracted to magnetic particle fields. See the photograph below showing a linear indication in weld SP015-01-018. ZPMC QC Inspector Mr. Liz Hijiang said ZPMC is going to grind plate SP015 fillet tack welds where QC observed linear indications and if the linear indications extend into the base material ZPMC will process critical weld repair (CWR) documents prior to making repairs of these base material gouges.

The QA Inspector observed no welding to be taking place in bay 3. Note: Many of the ZPMC workers are observing the Chinese Lunar New Year holiday and are not working today.

### Bay 1

The QA Inspector observed ZPMC welder Mr. Pan Mong stencil 66673 is using welding procedure specification WPS-B-T-2231-B-U2-F1 to make a flux cored groove weld between OBG plate PL112B and PL112D. The QA Inspector observed a welding current of approximately 300 amps, 30.0 volts and the base material had been preheated to a minimum of 10° C. Items observed by the QA Inspector appear to comply with project specifications.



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## Summary of Conversations:

See above for 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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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Cochran,Jim	QA Reviewer

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