

**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-006098**Date Inspected:** 14-Mar-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**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 Fabrication**Summary of Items Observed:**

CWI Inspectors Mr. Wang Wen Zhong, Mr. Wu Ming Kai

On this date CALTRANS OSM 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:

## Tower Bay 10

At around 1000 hours ZPMC QC representative Mr. (Tom) Li Xiu Yang requested Caltrans QA personnel to perform final visual inspection of lift 1 South Skin tower splice plate stiffener to baseplate welds SSD1-SA097 -1, -2, -3, -4; SSD1-SA106, -1, -2, -3, -4, -5; SSD1-SA108 -1, -2, -3, -4; and SSD1-SA109-1, -2, -3 for the purpose of issuing green tag releases. The QA Inspector performed random visual inspections of the stiffener to connection plate welds and observed the top toe of connection plate SSD1-SA108 weld #4 has a grind area that is approximately 2 mm below the surface of the adjacent base material, and weld SSD-SA97 has a 2mm diameter pit of unknown depth in the face of the weld. The QA Inspector informed ZPMC CWI Mr. Liu Yang of the below flush and pit problems and Mr. Yang said these areas will be weld repaired. At around 1530 hours Mr. Yang informed the QA Inspector that all weld repairs have been completed and the connection plates are ready for green tagging. The QA Inspector informed Mr. Yang that both of the weld repairs need to be ultrasonically inspected prior to issuance of green tags. The QA Inspector witnessed ZPMC ultrasonic Inspectors performing ultrasonic inspections of these two weld repair areas. See the photograph below showing ZPMC performing ultrasonic

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inspections of the repair weld. ABF representative Mr. Kim presented green tag release documents for the welds on each of the connection plates. Following ABF and ZPMC signatures the QA Inspector indicated Caltrans concurrence by placing lot number B254 on each of the four documents. Green tag #5601 was issued for South Skin A splice plate SSD1-SA097 welds -1, -2, -3,-4; green tag # 5602 was issued South Skin C for splice plate SSD1-SA106 welds -1, -2, -3, -4,-5; green tag # 2578 was issued for South Skin E splice plate SSD1-SA108 welds -1, -2, -3, -4; and green tag # 5603 was issued for South Skin B splice plate SSD1-SA109 welds -1, -2, -3.

This QA Inspector observed ZPMC welder Mr. Jin Xiao Gang, stencil 053474 is the using flux cored welding process to make stiffener plate repair weld SSDI-FDSA-1A/D-4B and the QA Inspector observed ZPMC Quality Control personnel had recorded Mr. Jin Xiao Gang having a welding current of approximately 320 amps and 31.5 volts. Items observed by the QA Inspector appear to comply with project specifications.

This QA Inspector observed ZPMC welder Mr. Tao Qian, stencil 040457 is the using flux cored welding process to make stiffener plate repair weld SSDI-FDSA-1A/D-5B and the QA Inspector observed ZPMC Quality Control personnel had recorded Mr. Tao Qian having a welding current of approximately 316 amps and 31.6 volts. Items observed by the QA Inspector appear to comply with project specifications.

This QA Inspector performed random ultrasonic inspections of approximately 10 percent length of Lift 3 East tower skin D weld ESD1-FDSA3-2A/CD-5b-2. This weld had previously been ultrasonically inspected and accepted by ZPMC inspection personnel. The QA Inspector observed the weld that was ultrasonically inspected by this QA Inspector appears to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.

### Tower Bay 11

At around 1000 hours ZPMC QC representative Mr. (Tom) Li Xiu Yang requested Caltrans QA personnel to perform final visual inspection of lift 2 West Tower Skin Plate D stiffener welds. QA Inspector Mr. "Victor" K.S. Narayan along with this QA Inspector performed random visual inspections of these welds and Mr. Narayan identified 37 locations where weld deficiencies needed to be reworked and this QA Inspector identified five weld relief copes where the skin plate had been gouged to a depth greater than 1 mm at the toe of the stiffener welds. ZPMC CWI Mr. Xu Li Feng was informed of the gouges in the copes and Mr. Xu Li Feng confirmed these five areas are not acceptable and that they will be repaired and presented to QA Inspectors at a later time.

This QA Inspector performed random ultrasonic inspections of approximately 10 percent length of Lift 3 West tower skin plate B weld SSD1-FBSA3-1A/C-21. This weld had previously been ultrasonically inspected and accepted by ZPMC inspection personnel. The QA Inspector observed the weld that was ultrasonically inspected by this QA Inspector appears to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.

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## Summary of Conversations:

See 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 Serge Sinevod phone: 134-8257-0045 , 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>	Clifford,William	QA Reviewer

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