

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-013068**Date Inspected:** 10-Apr-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Mr. Zhu Tian Shu**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:** Orthotropic Box Girder (OBG)**Summary of Items Observed:**

This CALTRANS OSM Quality Assurance Inspector (QA) Surendra Prabhu was present during the times noted above for observations relative to the fabrication of the Self Anchored Suspension (SAS) Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

This QA Inspector Randomly observed the following work in progress:

**BAY-1 -Traveler Rail (TR)**

Flux Cored Arc Welding (FCAW) welding of weld joint 20TR2-017-015. Welder is identified as 215397. ZPMC Quality Control (QC) is identified as Mr. Xiang Fong teng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2231-TC-U5-F.

**BAY-2- TR**

FCAW welding of Repair weld joint 10TR2-014-014. Welder is identified as 045240. ZPMC Quality Control (QC) is identified as Mr. Yang Qing feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-1G (1F)-Repair-1. The Repair welding was been performed against the Welding Repair Report (WRR) No: B-WR11789 Rev No: 0 and ZPMC Ultrasonic Testing (UT) Report No: B787-UT-10913R1.

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FCAW welding of Repair weld joint 10TR2-022-013 and 10TR2-022-014. Welder is identified as 045209. ZPMC Quality Control (QC) is identified as Mr. Yang Qing feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-1G (1F)-Repair-1. The Repair welding was been performed against the Welding Repair Report (WRR) No: B-WR11784 and B-WR11785 Rev No: 0 respectively and ZPMC Ultrasonic Testing (UT) Report No: B787-UT-10916R1-2.

### BAY-2-FLOORBEAM (FB)

Submerged Arc Welding (SAW) welding of weld joint FB3192-001-003. Welder is identified as 045265. ZPMC Quality Control (QC) is identified as Mr. Zhan hai feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2221-B-L2c-S-2.

SAW welding of weld joint FB3191-001-004. Welder is identified as 045270. ZPMC Quality Control (QC) is identified as Mr. Zhan hai feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2221-B-L2c-S-2.

FCAW welding of weld joint FB3204-001-030. Welder is identified as 062438. ZPMC Quality Control (QC) is identified as Mr. Zhan hai feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2231-B-U2a-F-1.

### BAY-5- TR

FCAW welding of Repair weld joint 10TR3-013-014. Welder is identified as 053486. ZPMC Quality Control (QC) is identified as Mr. Shen jian guo. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-2G (2F)-Repair-1. The Repair welding was been performed against the Welding Repair Report (WRR) No: B-WR11721 Rev No: 0 and ZPMC Ultrasonic Testing (UT) Report No: B787-UT-12187.

FCAW welding of Repair weld joint 11TR1-012-014. Welder is identified as 222387. ZPMC Quality Control (QC) is identified as Mr. Shen jian guo. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-2G (2F)-Repair-1. The Repair welding was been performed against the Welding Repair Report (WRR) No: B-WR11709 Rev No: 0 and ZPMC Ultrasonic Testing (UT) Report No: B787-UT-12187.

FCAW welding of weld joint TR5B-PP103-004. Welder is identified as 062438. ZPMC Quality Control (QC) is identified as Mr. Shen jian guo. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2232-TC-U4c-F.

### BAY-6-WEST JACKING FRAME (WJF).

Shielded Metal Arc Welding (SMAW) welding of weld joint WJF-0-360 and WJF-0-407. Welders are identified as 067707 and 049769 respectively. ZPMC Quality Control (QC) is identified as Mr. Zhang sheng jun. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-3112-1.

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## BAY-2- TR

During Quality Assurance random in-process observations of the fabrication of Traveler Rail (TR) 10TR2-014 and 10TR2-022, this Caltrans Quality Assurance (QA) inspector discovered the following issue:

- Complete Joint Penetration (CJP) Repair welding was performing without using run-off tabs.
- The use of run-off tabs is specified in AWS D1.5 2002 section 3.12.1.
- The member is identified as a TR, 10TR2-014 and 10TR2-022.
- The welds are a CJP, T joints identified as 10TR2-014-014 and 10TR2-022-013/014.
- The Repair welding was performing against the Welding Repair Report (WRR): B-WR11789 Rev No: 0 & B-WR11784/85 Rev No: 0 respectively and Ultrasonic Testing (UT) Report No: B787-UT-10913R1 and B787-UT-10916R1-2 respectively.
- The welds are joining to the Traveler Rail web to flanges.
- OBG TR-10TR2-014 and 10TR2-022 are located in the Bay-2.

This QA generated an incident report on this date for the above issue, for further details see attached photographs and an incident report.

Applicable reference: American Welding Society (AWS) D1.5 2002 section 3.12.1 “Welds shall be terminated at the end of a joint in a manner that will ensure sound welds. Whenever possible, this shall be done using weld tabs (extension bars and run off plates) placed in a manner that will duplicate the joint detail being welded”.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



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## Summary of Conversations:

Only general conversation was held between QA and Quality Control (QC) concerning this project.

## 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 Eric Tsang 15000422372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Prabhu,Surendra	Quality Assurance Inspector
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<b>Reviewed By:</b>	Miller,Mark	QA Reviewer
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