

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-010479**Date Inspected:** 28-Nov-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:** Liu Fawen**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) Components**Summary of Items Observed:**

On this date Caltrans Office of Structural Materials Quality Assurance Inspector, Sandeep Kumar (QA) was present during the times noted above for observations relative to the work being performed.

**BAY 2**

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 004749

**Magnetic Particle Testing (MT)**

This QA inspector performed MT of approximately 15% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector generated an MT report for this date. The member is identified as OBG Component. The weld designations reviewed are as follows:

1. FB3082 – 001 – 014; 022; 023; 024; 025; 029
2. FB3078 – 001 – 011; 012; 013; 016; 017; 053

This QA Inspector observed the following work in progress:

**Flux Core Arc Welding (FCAW):**

Weld joint # 003 located on Longitudinal Diaphragm LD3024 – 001. Welder is identified as 045209. ZPMC Quality Control (QC) Inspector is identified as Yang Qing Feng. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2231 – B – U2 – F – 1.

---

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

---

---

Weld joint # 019 located on Longitudinal Diaphragm LD3021 – 001. Welder is identified as 045209. ZPMC Quality Control (QC) Inspector is identified as Yang Qing Feng. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2231 – B – U2 – F – 1.

Submerged Arc Welding (SAW):

Weld joint # 004 located on Longitudinal Diaphragm LD3020 – 001. Welder is identified as 045270. ZPMC Quality Control (QC) Inspector is identified as Yang Qing Feng. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2221 – B – L2c – S – 2.

BAY 5

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 004745

Ultrasonic Testing (UT)

This QA inspector performed UT of approximately 10% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector generated an UT report for this date. The members are identified as OBG Components. The weld designations reviewed are as follows:

1. TR5B – PP035 – 003; 004
2. TR5B – PP033 – 003; 004
3. TR6A – PP032 – 001; 002
4. TR6A – PP034 – 001; 002
5. TR1A – PP071 – 001; 002
6. FB205 – 029 – 039
7. FB205 – 030 – 039
8. FB205 – 031 – 039
9. FB205 – 032 – 039
10. FB205 – 029 – 031; 032
11. FB205 – 030 – 031; 032
12. FB205 – 031 – 031; 032
13. FB205 – 032 – 031; 032
14. FB204 – 029 – 069; 070
15. FB204 – 030 – 065; 069
16. FB204 – 031 – 065; 069

This QA Inspector observed the following work in progress:

Flux Core Arc Welding (FCAW):

Weld joint # 006 located on Traveler Rail 10TR1 – 018. Welder is identified as 066359. ZPMC Quality Control (QC) Inspector is identified as Zhong Chong Biao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2232 – Tc – U5 – F.

Weld joint # 005 located on Traveler Rail 11TR3 – 022. Welder is identified as 067275. ZPMC Quality Control (QC) Inspector is identified as Zhong Chong Biao. The welding variables recorded by QC appeared to comply

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

---

with the WPS – B – T – 2232 – Tc – U5 – F.

Weld joint # 008 located on Traveler Rail 10TR2 – 002. Welder is identified as 250353. ZPMC Quality Control (QC) Inspector is identified as Zhong Chong Biao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132.

This QA Inspector observed the following work not in compliance:

During random 10% verification Ultrasonic Testing (UT) on Complete Joint Penetration (CJP) butt joint on Crossbeam identified as CB11, this Quality Assurance Inspector (QA) discovered the following:

One (1) Class “A” non conforming longitudinal indication measuring approximately 20 mm in length.

The weld designation is identified as FB204-032-069.

The CJP weld is joining floor beam diaphragm flanges identified as X206B to X203A.

The member is located in Bay 5.

The indication is in an area previously tested and accepted by ZPMC QC UT technicians.

The Notice of Witness Inspection Number (NWIT) is 4753.

### OTHER DETAILS:

Material thickness is 16mm.

The discontinuity rating is +9, Class “A” reject

Depth of the discontinuity from face A is approximately 9mm

### Applicable reference:

AWS D1.5-2002, Section 6, Table 6.3. specifies for material thicknesses 8mm through 20mm, a decibel (dbs) indication rating of 10 dbs or less shall be categorized as a Class A (large flaws) and any indication in this category shall be rejected (regardless of length).

This QA notified ZPMC QC identified as Mr. Zheng Zhi Wei and ABF inspector identified as Mr. Wang Wen Bin of the above issue and that an incident report will be generated.

See attached photo:

### BAY 6

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 004751

#### Magnetic Particle Testing (MT)

This QA inspector performed MT of approximately 15% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector generated an MT report for this date. The member is identified as OBG Component. The weld designations reviewed are as follows:

1. SP3045 – 001 – 069 – Green Tag # 10626

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

---

---

# WELDING INSPECTION REPORT

( Continued Page 4 of 4 )

---

---



## Summary of Conversations:

No Relevant 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 Eric Tsang - 15000422372, who represents the Office of Structural Materials for your project.

---

**Inspected By:** Kumar,Sandeep

Quality Assurance Inspector

---

**Reviewed By:** Hall,Steven

QA Reviewer