

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-010763**Date Inspected:** 17-Dec-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) & Tower Com**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 1

This QA Inspector observed the following work in progress:

Flux Core Arc Welding (FCAW):

Weld joint # 142 located on Cross Beam CB202G – 046. Welder is identified as 215397. ZPMC Quality Control (QC) Inspector is identified as Zhu Lin. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132 – 3.

Weld joint # 026 located on Floor Beam FB205 – 046. Welder is identified as 219188. ZPMC Quality Control (QC) Inspector is identified as Zhu Lin. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2232 – B – U2 – F.

Weld joint # 160 located on Cross Beam CB202G – 046. Welder is identified as 216575. ZPMC Quality Control (QC) Inspector is identified as Zhu Lin. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132 – 3.

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Shielded Metal Arc Welding (SMAW):

Weld joint # 147 located on Cross Beam CB202G – 048. Welder is identified as 216667. ZPMC Quality Control (QC) Inspector is identified as Tian lei. The welding variables recorded by QC appeared to comply with the WPS – B – P – 2114 – FCM.

BAY 2

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 004875

Visual Inspection Testing (VT)

This QA inspector performed VT of the area previously tested and accepted by ZPMC Quality Control personnel. The member is identified as OBG Component. The identified component reviewed as follows:

1. FB3006 – 001

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. FB3006 – 001 – 038; 042; 072; 093; 086; 131; 137; 133; 120; 141; 145; 139 – Green Tag # 11340

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 004879

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 members are identified as OBG Components. The weld designations reviewed are as follows:

1. FB3091 – 026; 027; 020; 021; 033; 041 – Green Tag # 11228
2. FB3031 – 133; 139; 087; 123; 077; 114; 107; 049; 072; 111; 058

BAY 5

This QA Inspector observed the following work in progress:

Flux Core Arc Welding (FCAW):

Weld joint # 009 located on Traveler Rail 11TR1 – 016. Welder is identified as 250353. ZPMC Quality Control (QC) Inspector is identified as Shen Jian Guo. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132.

Weld joint # 012 located on Traveler Rail 10TR1 – 027. Welder is identified as 066359. ZPMC Quality Control (QC) Inspector is identified as Shen Jian Guo. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132.

Weld joint # 014 located on Traveler Rail 11TR1 – 014. Welder is identified as 204342. ZPMC Quality Control (QC) Inspector is identified as Shen Jian Guo. The welding variables recorded by QC appeared to comply with the

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WPS – B – T – 2232 – Tc – U5 – F.

Weld joint # 012 located on Traveler Rail 11TR10 – 001. Welder is identified as 066359. ZPMC Quality Control (QC) Inspector is identified as Shen Jian Guo. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2132.

BAY 6

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 004877

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. FB3049 – 017 – 001~007; 009~022

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 004882

Visual Inspection Testing (VT)

This QA inspector performed VT of the area previously tested and accepted by ZPMC Quality Control personnel. The member is identified as Tower Component. The identified component reviewed as follows:

WEST TOWER LIFT 2 STRUT PLATE

1. WD1 – A305 – 77M – 3

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 Tower Component. The weld designations reviewed are as follows:

WEST TOWER LIFT 2 STRUT PLATE

1. WD1 – A305 – 77M – 3 – 1; 2; 7; 8; 9; 10 (A/B); 028; 026; 032; 016; 014; 015; 032; 040; 043; 045; 055; 053; 048

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 member is identified as Tower Component. The weld designations reviewed are as follows:

WEST TOWER LIFT 2 STRUT PLATE

1. WD1 – A305 – 77M – 3 – 1; 2; 7; 8; 9; 10 (A/B)

This QA Inspector observed the following work not in compliance:

During a random in-process visual verification prior to performing Magnetic Particle Testing (MT) on a Floor Beam (FB) for Cross Beam CB17 located at Bay # 6, the Caltrans Quality Assurance (QA) Inspector observed a fillet weld that had been excavated approximately 50 mm in length and 6 mm in depth. The contractor (ZPMC) offered a formal NDT Inspection Notification Sheet, acknowledging the weld was complete and that ZPMC MT

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technicians had tested and accepted 100% MT on this FB. Additional information identifying the non-conformance is listed below.

- The Floor Beam is identified as FB3049-017-008.
 - The fillet weld connects the FB Web Plate (PL3089A) to FB Stiffener (X3090R).
 - The fillet weld size is 6 mm in size per the approved contract drawings.
 - The NDT Inspection Notification Sheet request number was identified as: 004835
- For further information, please see the attached photos and applicable reference below.

Applicable reference:

AWS D1.5 (02) Section 6.6.3; "The Contractor shall comply with all requests of the QA Inspector to correct deficiencies in materials and workmanship, as specified in the contract documents."

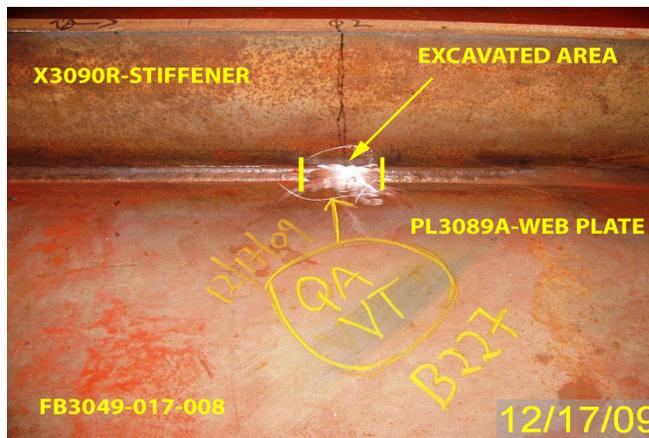
AWS D1.5 (02) Section 6.6.6; "The Contractor shall schedule NDT to facilitate attendance by the QA Inspector. The QA Inspector shall be advised by the Contractor of operational and NDT schedules and scheduled changes."

AWS D1.5 (02) Section 6.7.3; "After repairs of discontinuities have been made, additional NDT inspection shall be performed to ensure that the repairs are satisfactory. This testing shall include the repaired area plus at least 50 mm [2 in.] on each side of the repaired area."

This QA notified ZPMC CWI identified as Mr. Li Jia and ABF inspector identified as Mr. Chang Bao Qian of the above issue and that an incident report will be generated.

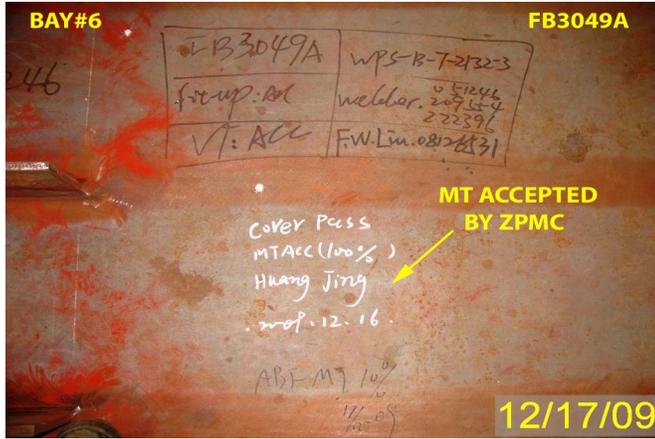
See attached photos:

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



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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