

**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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-017731**Date Inspected:** 26-Oct-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:** Zhu Feng**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 & 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.

**TOWER JETTY**

This QA Inspector observed the following work in progress

Shielded Metal Arc Welding (SMAW):

Weld joint # 4B located on East tower Lift-4 Skin 'E', 119 M Cross bracing gusset plate WD1 – GUSA3 – 3 – 119M – E. Welder is identified as 044541. ZPMC Quality Control (QC) Inspector is identified Zhu Feng. The welding variables recorded by QC appeared to comply with the WPS – B – P – 2214 – Tc – U5b - FCM.

Weld joint # 4B located on South tower Lift-4 Skin 'E', 119 M Cross bracing gusset plate WD1 – GUSA3 – 3 – 119M – S. Welder is identified as 040582. ZPMC Quality Control (QC) Inspector is identified Zhu Feng. The welding variables recorded by QC appeared to comply with the WPS – B – P – 2214 – Tc – U5b - FCM.

Weld joint # 4B located on West tower Lift-4 Skin 'E', 119 M Cross bracing gusset plate WD1 – GUSA3 – 3 – 119M – W. Welder is identified as 054460. ZPMC Quality Control (QC) Inspector is identified Zhu Feng. The welding variables recorded by QC appeared to comply with the WPS – B – P – 2214 – Tc – U5b - FCM.

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# WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

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Weld joint # 3B located on North tower Lift-4 Skin 'A', 119 M Cross bracing gusset plate WD1 – GUSA3 – 3 – 119M – N. Welder is identified as 057220. ZPMC Quality Control (QC) Inspector is identified Zhu Feng. The welding variables recorded by QC appeared to comply with the WPS – B – P – 2214 – Tc – U5b - FCM.

BAY#11

This QA Inspector observed the following work in progress

Shielded Metal Arc Welding (SMAW):

Weld joint # 06A located on Lift-5 Bracket ND1 – BRSA5 – 2. Welder is identified as 041271. ZPMC Quality Control (QC) Inspector is identified as Zhao Mao Mao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 3212 – Tc – U5b.

Weld joint # 06A located on Lift-5 Bracket ND1 – BRSA5 – 2. Welder is identified as 040690. ZPMC Quality Control (QC) Inspector is identified as Zhao Mao Mao. The welding variables recorded by QC appeared to comply with the WPS – B – T – 3212 – Tc – U5b.

ORTHOTROPIC BOX GIRDER (OBG) AT BAY#11

This QA Inspector observed the following work in progress

Fluxcored Arc Welding (FCAW):

Weld joint # 43 located on Bike Path BK004A1 – 023. Welder is identified as 040704. ZPMC Quality Control (QC) Inspector is identified as Yu Dong Ping. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2232 – Tc – U4c – F.

This QA Inspector observed the following work not in compliance:

Description of Incident:

During the Caltrans Quality Assurance (QA) in-process observation on East and West tower lift-5 grillages; this QA Inspector discovered the following issues:

-West tower Lift-5 issues:-

1. Non-Fused backing bar – WSD1-TL5-4B/F#7,36
2. Non-Fused backing bar – WSD1-TL5-4B/F#8,35
3. Non-Fused backing bar – WSD1-TL5-4B/F#24
4. Buckled backing bar – WSD1-TL5-4B/F#4

-East tower Lift-5 issue:-

1. Removed portion of the backing requires welding – ESD1-TL5-2B/F#23

-As per the RFI-002099R0 and AWS D1.5 the groove welds made with steel backing shall have the weld metal thoroughly fused and weld the cavity after removal of the backing bar to build-up the surface and match the backing bar geometry.

-Above mentioned welds are T-joint complete joint penetration (CJP) welds.

Applicable reference:

AWD 1.5 2002, Section 3.13.2: “Groove welds made with the use of steel backing shall have the weld metal

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# WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

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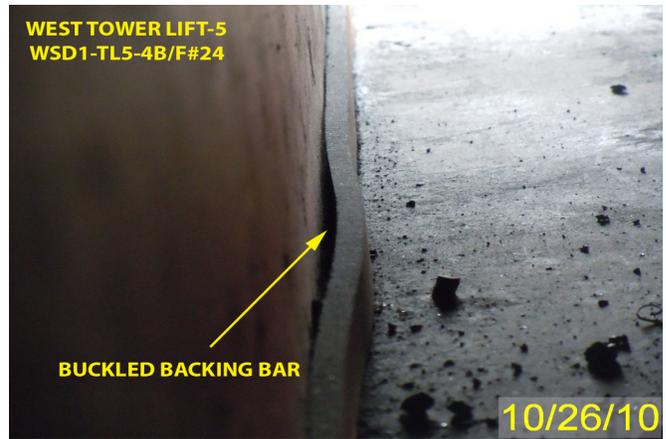
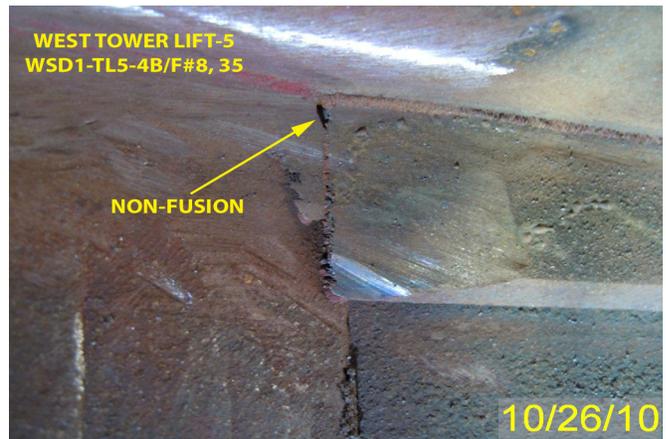
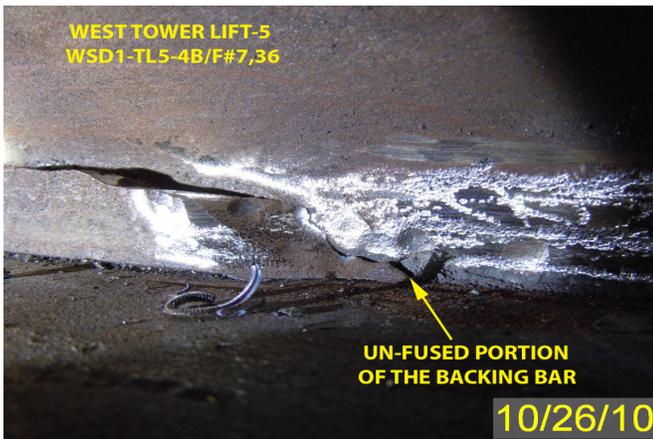
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thoroughly fused with the backing.”

RFI-002099R0: “Repair the blow-through by gouging the backing bar and deck weld to sound metal, followed by grinding to provide a sloped area suitable for welding. Then weld the cavity, building up the surface to match the backing bar geometry. After welding, grind the weld in to approximate shape of the backing to smoothly blend to the unaffected backing.”

For further information see below pictures:-

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



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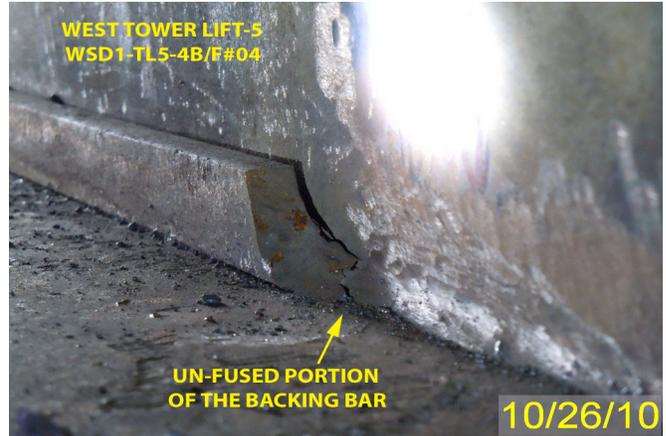
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# WELDING INSPECTION REPORT

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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 Thomas Ho- 15002048250, who represents the Office of Structural Materials for your project.

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**Inspected By:** Kumar,Sandeep

Quality Assurance Inspector

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**Reviewed By:** Clifford,William

QA Reviewer