

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-013711**Date Inspected:** 29-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**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 Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance Inspector (QA Inspector) George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 11

This QA Inspector randomly observed the following work in progress in Bay 11:

SMAW welding attaching a temporary lifting eye plate to outside PCMK east tower, lift 5, skin D (60 mm thickness), approximately 700mm from bottom of lift 5. Welder was not identified because he left the work area when this QA Inspector began taking photographs. QC was identified as ZPMC CWI Li Lin (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Li Bin, who was not a CWI. The welding variables recorded by QC1's assistant did not appear to comply with WPS-B-T-4114, as noted below.

ZPMC personnel performing shielded metal arc welding, without sufficient base material preheating as follows:

- Multiple 140 degree Celsius Tempilstik temperature indicator marks applied by this QA Inspector to the adjacent base material within approximately 75mm from the point of welding did not melt.
- WPS-B-T-4114 presented to this QA Inspector by ZPMC QC Li Bin is designated for A709M, grade 345 material.

- East tower, lift 5, skin D is designated as A709M, HPS 485W-T2-Z. All previous welding on lift 5 has been performed with a WPS requiring a minimum preheat and interpass temperature of 180° C.

This QA Inspector generated a Caltrans Incident Report, TL15, concerning the above noted issue and informed ZPMC QC Li Bin and ABF Representative Luo Lai Quan of this issue. See the photos below for additional

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information.

Match drilling with magnetically mounted drills through previously scored holes into PCMK east tower, lift 3 and lift 4 at the lift3/lift 4 joint, skin A, from the outside in. No template was being used.

Heavy Dock

This QA Inspector randomly observed the following work in progress on the heavy dock.

FCAW welding of weld joint NSD1-SA11-15 located outside PCMK north tower, lift 1 base, skin B, shear plate stiffener to connection plate. Welder was identified as 066105. QC was identified as ZPMC CWI Gong Liang Zhu (QC2). The welding variables recorded by QC2 appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint NSD1-SA11-5 located outside PCMK north tower, lift 1 base, skin B, shear plate stiffener to connection plate. Welder was identified as 066401. QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint NSD1-SA17-F/G-11 located outside PCMK north tower, lift 1 base, skin C, shear plate stiffener to connection plate. Welder was identified as 068865. QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint NSD1-SA17-F/G-72 located outside PCMK north tower, lift 1 base, skin C, shear plate stiffener to connection plate. Welder was identified as 040349. QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint NSD1-SA17-F/G-84 located outside PCMK north tower, lift 1 base, skin C, shear plate stiffener to connection plate. Welder was identified as 053116. QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint ESD1-A167A/H-6 located outside PCMK east tower, lift 1 base, skins B/C corner to shear plate stiffener. Welder was identified as 067993. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint ESD1-A167A/H-7 located outside PCMK east tower, lift 1 base, skins B/C corner to shear plate stiffener. Welders were identified as 067888, 068596. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint NSD1-A112A/H-1 located outside PCMK north tower, lift 1 base, skins B/C corner to shear plate stiffener. Welders were identified as 068765, 068916. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

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FCAW welding of weld joint NSD1-A112A/H-3A located outside PCMK north tower, lift 1 base, skins B/C corner to shear plate stiffener. Welder was identified as 068994. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-U5-F.

FCAW welding of weld joint SSD1-SA40B/E-36 located outside PCMK south tower, lift 1 base, skin D, shear plate stiffener to connection plate. Welder was identified as 066687. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint SSD1-SA40B/E-33 located outside PCMK south tower, lift 1 base, skin D, shear plate stiffener to connection plate. Welder was identified as 066825. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint ESD1-SA294F/G-37 located outside PCMK east tower, lift 1 base, skin C, shear plate stiffener to connection plate. Welder was identified as 068859. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint ESD1-SA296B/E-29 located outside PCMK east tower, lift 1 base, skin D, shear plate stiffener to connection plate. Welder was identified as 070022. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint ESD1-SA296B/E-23 located outside PCMK east tower, lift 1 base, skin D, shear plate stiffener to connection plate. Welder was identified as 067037. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

FCAW welding of weld joint ESD1-SA296B/E-14 located outside PCMK east tower, lift 1 base, skin D, shear plate stiffener to connection plate. Welder was identified as 068949. QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Yang Mingming, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-2333-TC-P4-F.

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

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documents.



Summary of Conversations:

As noted 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 Skyler Guest, 150-0042-2360, who represents the Office of Structural Materials for your project.

Inspected By: Goulet, George

Quality Assurance Inspector

Reviewed By: Dawson, Paul

QA Reviewer