

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-004275**Date Inspected:** 23-Oct-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai China**CWI Name:** Liu Yang**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**Summary of Items Observed:**

Tower Shop Bay 2

Confined Space/Hot work

ZPMC continues to work inside tower shaft ESD1-Lift 1 (east tower shaft) which has been determined as a confined space area. ZPMC does not have the required Confined space or Hot work permit posted at the entry of the confined space. Caltrans QA Inspector observed 11 ZPMC employee's badges posted as working inside the area performing grinding and welding operations. With continued work being performed and no Confined Space permit this prevents Caltrans QA Inspectors from monitoring the in progress work being performed inside the tower section.

General Observation of Tower bay 2

This Caltrans QA Inspector during his random observation of heavy duty tower shop 2 observed ZPMC fitting lift 2 of skin plate ESD1-SA388 using a jack to move the 60mm plate within intimate contact for the 90mm plate for tack welding. Electric preheating equipment was in place on weld ESD1-SA376 C/E-26 where ZPMC was to begin the SAW welding process. During this QA Inspector's observations it was observed in the rod and flux storage room that ZPMC had the rod ovens on and temperatures were; oven 2/3-129°C, oven 4/5-126°C and 6/7-127°C. The heated flux storage bins were at 0- 135°C and 1- 137°C.

OBG Bay 7

Caltrans Ultrasonic Verification

This Caltrans QA Inspectors performed random 10% UT; QA verification for OBG floor beam components after ZPMC had completed and accepted the CJP weldments. Weld numbers FB024-002-78~81, 101 and 108 and FB023-005-78~81, 101 and 108 were completed for the QA verification. Caltrans QA Inspector performed the QA verification for tower components after ZPMC had completed and accepted the CJP weldments. At the time of the

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QA review the weld appeared to be within compliance. A TL-6027 shall be generated for these locations.

Tower Shop Bay 1

Time of Inspection Gr. 485

Caltrans QA Inspector spoke with ABF personnel concerning SSD1-Skin D for final VT and MT. According to the special provisions Sec 10 1.59 Inspection and testing Note 10 states; Welds, and adjacent parent material within 10 mm of all accessible areas surrounding the weld, in grades with strength levels of 485 and above shall be tested 100% by MT in addition to other specified inspection. The timing of visual and any method of NDT for welds in these steels shall be in accordance with AWS D1.5, Section 12.16.4. And AWS D1.5 Sec 12.16.4 states that steel greater than Gr. 345 shall have a hold time for Final VT, MT and UT for thickness up to 50mm of 48 hrs and greater than 50mm will be 72 hrs before performing these inspections. This QA Inspector spoke with the Tower SMR and it was relayed that we will continue with the higher grade standard being Gr. 485 and the inspection hold time. ABF stated they are staying within these guidelines of the special provisions but will submit an RFI for changing this requirement for the 345 to 485 miss-match of steel.

General Observation of Tower bay 1

This Caltrans QA Inspector during his random observation of heavy duty tower shop 1 observed ZPMC fitting single diaphragm plate into tower assembly SSD1 lift 1 at the 9 Meter elevation. At the gantry ZPMC had placed electric pre-heaters on the multi-pass PJP weldments. These weldment were in-process for the FCAW of stiffener plates (4) to skin plate A lift 2. The welding procedure being utilized was WPS-B-T-2337-T-C-F. Submerged Arc Welding (SAW) was being used under WPS-B-T-2221-B-U3c-S-2 at 2 locations for tower skin plates as identified as SSD1-SA208-A/D-2A with welding operator Chen Hongxia # 040460 and SSD1-SA163-A/D-2A with welding operator Hua Guimei # 050295. The weldment were at the intermediate weld pass stages with ZPMC's CWI Liu Yang present for the monitoring of welding parameters and in process progression. Mr. Yang was also assisted with 3 to 5 additional QC personnel to help with this task at various locations within the bay.

89M Mock up

During his QA random observations it was noted that ZPMC was grinding on the 89M mock up where they had removed the last fit lug trial number MUB-MA21-G/J-25/26. It is unknown at this time why ZPMC has removed this component. The only ZPMC employee that was at this location was the grinding personnel. Below is a digital picture taken at the time this QA inspector first observed the procedure. No information was relayed to Caltrans QA Inspector that ZPMC would be removing the fit lug and for what reason.



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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 Josh Ishibashi, 1-376-471-0411, who represents the Office of Structural Materials for your project.

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| Inspected By: | Riley, Ken | Quality Assurance Inspector |
| Reviewed By: | Carreon, Albert | QA Reviewer |
