

**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-004508**Date Inspected:** 30-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 / Sun Bo**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:**

89M Mock-up

Caltrans QA Inspector observed that ZPMC was performing the welding of fit-lug to diaphragm plate on 2 welds, these welds were identified as MUB-MA21-A/J-57 and MUB-MA21-A/J-24. Upon the arrival of this QA inspector it was observed that ZPMC had completed the root pass welding of both fit-lug to diaphragm plate locations and was waiting for the MT technician to perform the MT at the required hold point per the procedure. Upon completion of the MT ZPMC had accepted the results with ABF personnel also accepting the results of the MT testing as required. It was noted that ZPMC was using the Shielded Metal Arc Welding (SMAW) process for these two welds as outlined in ABF-WPS-D15-F1202A with electrode E7018- C3L H4R, 3.2 mm diameter electrode. ZPMC welding personnel Han Xiao Feng # 054467 was welding number MUB-MA21-A/J-57 with the SMAW process in the 3G position. The root pass parameters were; Pre-heat 188°C and 131 amps. For the intermediate weld passes up to pass #4 the welding parameters were; Pre-heat of 196 and 133 amps. For weld number MUB-MA21-A/J-24 the welder was Dai Lu # 048659 welding with SMAW in 3G position the welding parameters for the root pass was; pre-heat 192 and 128 amps. For the intermediate weld passes up to weld pass #4 the parameters were; pre-heat 193 and 130 amps. The weld sizes being placed from root pass to intermediate pass 3 were within the new WPS requirements of 12mm maximum weld pass. On weld pass #4 for both weld numbers ZPMC had placed a 30mm +/- weld pass size which exceeded the WPS requirements of 12mm. This QA inspector informed ABF personnel Mike Williams of the issue and was informed that he had informed ZPMC to remove the weldments down to base metal for complete removal and MT the base and start the procedure over again. ZPMC QC personnel Ken Zhang came to the site of the 89M and spoke with this QA inspector to inform him that ZPMC would not remove the complete weldment as recommended by ABF but would only remove 6mm in depth, that

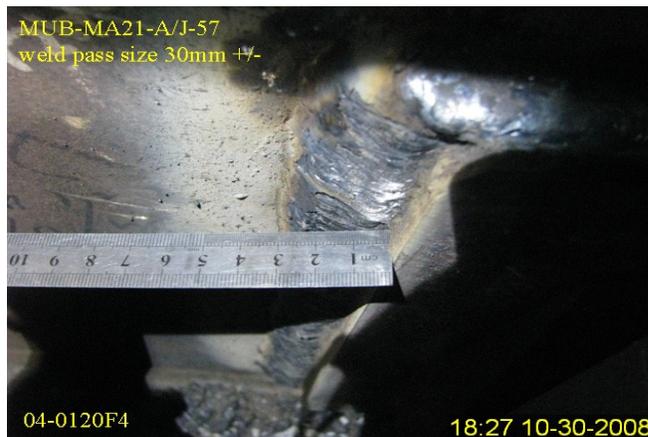
# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

would include the pass that was placed and 2mm into the underlying weld passes. After this would be done ZPMC would continue with the weld trial of diaphragm to stiffener welds. This Caltrans QA Inspector observed that ZPMC had removed these weldments as described above and continued welding at approximately 2000 hrs and completed the fillet welds with the size being 30mm +/- (22mm required per procedure). At the completion of the vertical weldment ZPMC the proceeded to complete the wrap around weld (horizontal weld that wraps around to the top of the fit lug plate) after this was completed ZPMC took temperature readings at both the horizontal weld 230°C and vertical welds 173°C which at this time the QA inspector was informed that ZPMC would re- heat the weld joints back up to approximately 180°C then start their cool down for these locations. At this point it was the end of this QA inspectors shift and the starting time and temperatures for the controlled cool down were not available.

## Tower Shop Bay 3

The QA Inspector randomly observed ZPMC personnel performing grinding of repairs for the Orthotropic Box Girder (OBG) deck panel Partial Joint Penetration (PJP) welds. This QA inspector along with ZPMC and ABF personnel performed the 3 party initial visual inspections. All 3 parties agreed on the areas to be repaired and ZPMC continued working on these locations. The yellow ABF tracking tag affixed to the deck panel was signed by all 3 parties. The deck panels inspected were DP590-001, DP585-001 and DP585-002. Certified Welding Inspector for ZPMC Li Sun Bo (night shift) were present at this location for the monitoring of the deck repairs and inspection. Also noted in bay 3 to monitor deck panel repairs were ABF personnel Wang Wei.



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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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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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<b>Inspected By:</b>	Riley, Ken	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon, Albert	QA Reviewer

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