DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-001280
Date Inspected: 19-Jan-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 630
OSM Departure Time: 1530
Location: Shanghai, China

CWI Name: ZPMC-Ye Yong Jun and Woo Ming Hai

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: New Tower Mock-up, Bay 1, Bay 2, Bay 3 an

Summary of Items Observed:

On this date, the Caltrans Quality Assurance (QA) representative, John P. Tracy, conducted assessments while on site at Zhenhua Port Machinery Company (ZPMC) for Caltrans Project 04-0120F4-SAS. The following is the detailed review of the following observations:

Bay 1:

Gas Metal Arc Weld (GMAW) / Submerged Arc Weld (SAW) gantry welder was not active. There was a closed U-rib component within negative camber fixture. The while the tack welds for the u-rib to plates welds appeared to be in conformance, the u-rib splices were objectionable due to poor weld quality, to a visual standard, plus poor fit-up being misalignment and excessive gap. There was not a ZPMC Certified Welding Inspector (CWI) or Quality Control (QC) person within audible or visual range. No welding operations were noted. The Caltrans representative, Mr. Greg Bertlesman, was present during the observation and will place the issue within the "Hot Topics" section of the daily turn-over report for Caltrans task leader disposition.

Bay 2:

77m mock-up section had ongoing thermal welding operation ongoing for Plate to Diaphragm attachment welds via Shielded Metal Arc Weld (SMAW) process and Plate to Plate attachment welds via Flux Core Arc Weld (FCAW) process.

The 89m built-up channels (shear link housings) were inactive. The corner stiffener section for this assembly were tack welded on an off shift and appear to be awaiting weld completion. The four panels have been completed and are laying on the elevated platform in the shear link area.

The 89m corner braces for the mock-up section were tack welded but inactive. Multiple pieces to the assembly are laying on the elevated platform in the shear link area and appear to be awaiting weld completion.

114m upper and lower mock-up sections completed machining operations and were thermally inactive with only mechanical clean-up and grinding operation being performed. ZPMC was noted as performing Dry Magnetic Particle Testing (DMT) inspection on the external plate to plate attachment welds on the lower section.

NOTE It was noted that the ZPMC inspectors are not performing DMT inspection in the required 25.4mm sections adjacent to the weld. It is unclear whether verbal communications, with the inspectors, was fully understood due to the absence of an English/Chinese interpreter. The Caltrans representative, Mr. Greg Bertlesman, was present during the observation and will place the issue within the "Hot Topics" section of the daily turn-over report for Caltrans task leader disposition.

MUSB-MA26-1 and -2 shear links were thermally inactive with only mechanical clean-up and grinding operation being performed.

89m MUSB-MA29 Cross Brace has had heat straightening operations performed plus flange to inner, and outer, stiffener attachment welds have been tack welded and have root passes already in place, however the component remains incomplete and inactive.

The plate straightener was observed rolling 75mm plate through it.

Oxygen(oxy) / Fuel Cutting Station was actively cutting 75x3000x8000(mm) American Society of Testing Materials (ASTM) A709M-HPS-485WT2-Z for production diaphragm assemblies.

New Tower Mock-up Bay:
89m mock-up section had ongoing thermal welding operation ongoing for Plate to Diaphragm attachment welds via Shielded Metal Arc Weld (SMAW) process and Plate to Plate attachment welds via Flux Core Arc Weld (FCAW) process. ZPMC CWI, Ye Yong Jun, and two ZPMC QC inspectors were present during the above said operations. ZPMC personnel were carbon arc gouging out the external weld of Plate E to Plate D attachment weld.

Oxygen(oxy) / Fuel Cutting Station was actively cutting 75x3000x8000(mm) American Society of Testing Materials (ASTM) A709M-HPS-485WT2-Z for production diaphragm assemblies.

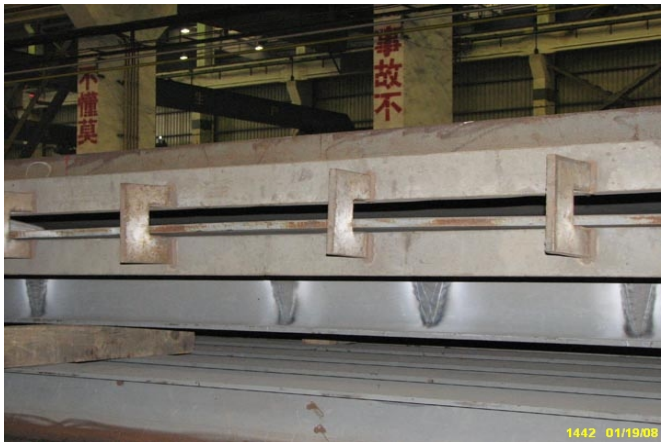
Bay 3:
Thermal operation were ongoing with multiple side plates, in various stages of completion, being worked simultaneously. ZPMC Lead CWI, Woo Ming Kat, was the only CWI for this area. He was observed walking the entire floor within acceptable time limits, established within the contractual documents. He reported to the Caltrans representative that he had five QC inspectors under his control to oversee floor operations.

Bay 7:
No thermal operations were observed during the course of the Caltrans observational period. ZPMC QC

representative, after the fact, notified the Caltrans representative that multiple (>20) diaphragm plates would be QC inspected, over the course of the next two days, via DMT process.

Consumable Welding Electrode Storage Rooms - ***NOTE*** Area 1 is being defined as the storage/issue room which is closest to the existing mock-up bays currently in use. Area 2 is being defined as the storage/issue room which is closest to the new mock-up bays.
Area 1 - The Storage temperatures and issuance log sheets for consumable electrodes and flux appeared to be in conformance within the criteria set forth within the contractual documents.
Area 2 - The Caltrans representative observed the issuance room, which was outside of the new tower mock-up bay. There was no obvious evidence that this room, while being adequately equipped for the SFOBB project requirements, was being utilized as a storage/issuance point for tower mock-up operations. Further action on this issue is pending.

Included below are digital pictures that support the observations recorded within this report.



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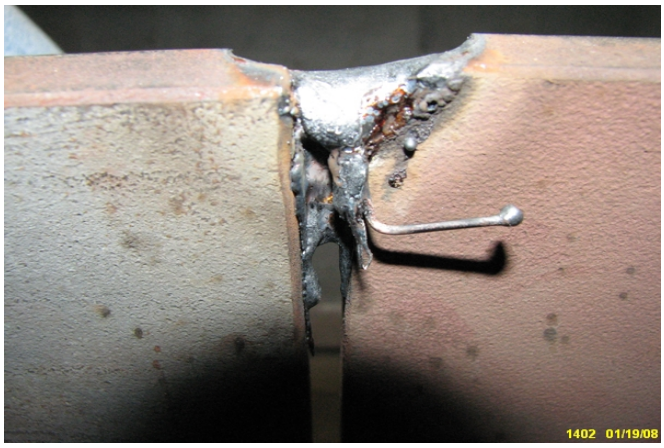

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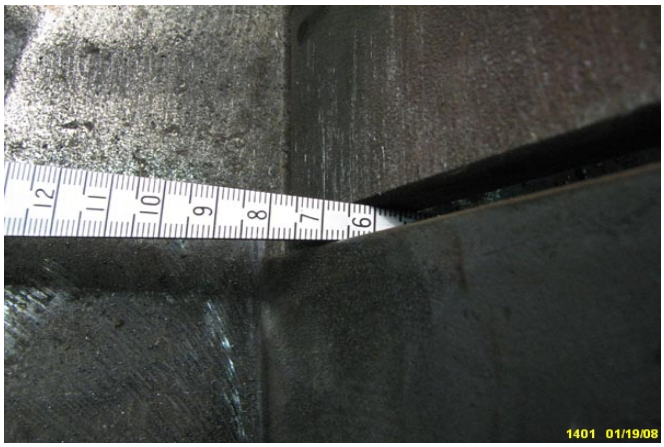

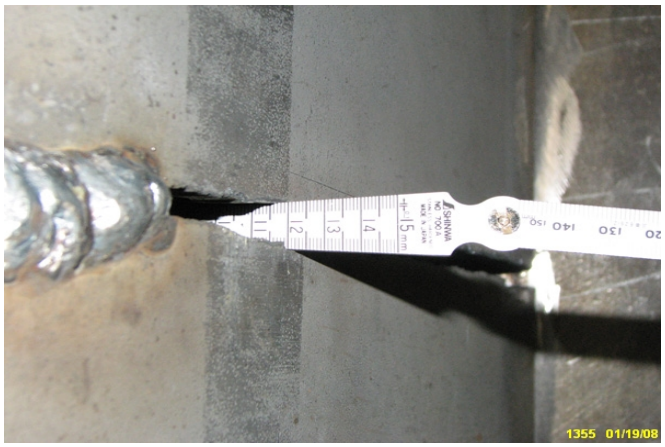

Summary of Conversations:

At the completion of the above stated operations, the ZPMC Certified Welding Inspectors, Ye Yong Jun and Woo Ming Kat, reported that the parameters followed and their noted results were found to be in accordance with the criteria set forth within the contractual documents.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Tracy,John	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer