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 #: 73.28

WELDING INSPECTION REPORT

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

Report No: WIR-007436
Date Inspected: 17-Jun-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: HoChang, Korea

OSM Arrival Time: 800
OSM Departure Time: 1800
Location: Unyang/Changwon, Kore

CWI Name:	Sang Ho Kwak		**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: Pier E2 bearing and Shear key

Summary of Items Observed:

The following report is based on METS observations at HoChang Machinery Industries (HCMI). Current work: Casting, forging and machining.

On this date the Caltrans Quality Assurance (QA) inspector, Dong J. Shin arrived at HoChang Machinery Industries (HCMI) located at Unyang, Korea and DooSan Heavy Industries(DHIC) located at Changwon, Korea. The Purpose of this trip was to observe quality control during fabrication and process of following items.

Forging

1. Bearing Bottom Housing (B1-07/F07302-010): Completed final UT
2. Bearing Bottom Housing (B2-07/F07302-020): Completed final UT
3. Bearing Bottom Housing (B3-07/F07302-030): Completed final UT
4. Bearing Bottom Housing (B4-07/F07302-040): Completed MT
5. Spherical Ring (S1-07/F07302-050): Completed final UT
6. Spherical Ring (S2-07/F07302-060): Completed final UT
7. Spherical Ring (S3-07/F07302-070): Completed final UT
8. Spherical Ring (S4-07/F07302-080): Completed final UT
9. Solid Shaft (B1-02/F07302-090): Completed final UT
10. Solid Shaft (B2-02/F07302-100): Completed final UT
11. Solid Shaft (B3-02/F07302-110): Completed MT
12. Solid Shaft (B4-02/F07302-120): Completed MT

• F number is DooSan Production Number.
• B number is drawing Number .

Casting

On this date the QA inspector observed DHIC was performing repair welding on the castings listed below. The QA inspector observed HMIC QC inspector and DHIC QC inspector verify the welding parameters of the welding personnel listed below prior to the start of repair welding. The QA inspector observed the welding process utilized Flux Core Arc Welding (FCAW) with filler metal E81T1-K2, 1.6mm diameter and manufactured by SEAH-ESAB with brand name Dual shield 1181-K2.
The QA inspector observed the following welding parameters; 23-26 volts and 210-250 amps with a travel speed of 13-16 cm/min. The QA inspector observed a shielding gas flow of 10-25 l/min with a preheat temperature over 100ºC which appeared to be maintained 24 hours a day.
The welding parameters appeared to comply with approve welding procedure specification; A-F-Z1Z1-219.

Welder: Mr. YT, Kim and Mr. BJ, Na welding on S4-01.
Mr. JH, Nam welding on B1-06.

1. Bearing Top Housing(B1-06, C07039-010): Continued repair welding.
2. Bearing Top Housing(B2-06, C07039-020): Continued repair welding.
3. Bearing Top Housing(B3-06, C07039-030): Completed PWHT
4. Bearing Top Housing(B4-06, C07039-040): Completed PWHT
5. Bearing Hold Down Assembly (B1-01-1, C07039-050): Completed Final UT
6. Bearing Hold Down Assembly (B1-01-2, C07039-060): Completed Final UT
7. Bearing Hold Down Assembly (B2-01-1, C07039-070): Completed Final UT
8. Bearing Hold Down Assembly (B2-01-2, C07039-080): Completed PWHT
9. Bearing Hold Down Assembly (B3-01-1, C07039-170): Completed Final UT
10. Bearing Hold Down Assembly (B3-01-2, C07039-180): Completed Final UT
11. Bearing Hold Down Assembly (B4-01-1, C07039-190): Completed Final UT
12. Bearing Hold Down Assembly (B4-01-2, C07039-200): Completed PWHT
13. Shear Key Stub(S1-01, C07039-090) : Completed PWHT
14. Shear Key Stub(S2-01, C07039-100) : Completed PWHT
15. Shear Key Stub(S3-01, C07039-110) : Completed PWHT
16. Shear Key Stub(S4-01, C07039-120) : Continued repair welding.
17. Shear key Housing(S1-03, C07039-130): Continued repair welding.
18. Shear key Housing(S2-03, C07039-140): Completed PWHT
19. Shear key Housing(S3-03, C07039-150): Started repair welding
20. Shear key Housing(S4-03, C07039-160): Started repair welding

* S and B number is drawing number.
* C number is DSHI ID number

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

This QA Inspector observed mechanical testing of PQR tests for WPS No FC-061 1F, SFC-013 and FC-060-1G and 3G. The test results appeared to comply with the contract requirements. Please see Witness Report (TL-6032) this date for further details.

Please see photos below.

Summary of Conversations:

*Discuss with Mr. S. H. Kwak regarding general project schedule.

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 Nina Choy, (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Shin,DJ	Quality Assurance Inspector
Reviewed By:	Hager,Craig	QA Reviewer