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

Bay Area Branch
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Contract #: 04-0120F4
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-007439
Date Inspected: 22-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

Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ 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 MPT
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 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 lissted 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, manufactured by SEAH-ESAB with brand name Dual shield 1181-K2. The QA inspector observed the follwoing 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 and a preheat temperature of over 100ºC which appeared to be amintained 24 hours a day. The welding observed appeared to comply with the approved welding procedure specification; A-F-Z1Z1-219.

Welder: Mr. JH, Nam welding on B2-06.

This QA inspector observed DHIC NDT technician Mr. KS, Lee and Mr. SD Lee performing the final MT and UT inspection of the folling materail; S3-01(Stub), B3-06(Bearing top housing) and B2-01-2(Bearing Hold Down)

This QA inspector checked the fowing items:
MT: yoke lifting power, pie gauge magnetic field strength, and calibration date.
UT: Basic and Distance Amplitude Correction (DAC) Calibrations, transducer size and frequency.
The QA obseved the follwoing transducers being used:

Straight Beam: 2Mhz, 24 mm diameter
Angle Beam: 20 x 22mm, 1Mhz, 45º
Dual Element Straight Beam: 6 x 20mm, 4Mhz
Minature Angle Beam: 8 x 9mm, 2 Mhz, 45º

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): Continued final UT
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 final UT
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 final UT
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 final UT
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): Continued repair welding.
20. Shear key Housing(S4-03, C07039-160): Continued repair welding.

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

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.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

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