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-009778
Date Inspected: 16-Oct-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, Korea

CWI Name: Sang Ho Kwak

Inspected CWI report:	☐ Yes	☑ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A

CWI Present:	☑ Yes	☐ No	
Rod Oven in Use:	☑ Yes	☐ No	☐ N/A
Weld Procedures Followed:	☑ 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 and Onsan Korea and Korea Precision Co. located at Dooseo Korea. The Purpose of this trip was to observe quality control during fabrication and process of following items.

Forging

HMIC Heat straightening personnel started heat straightening on Spherical Rings using Oxy- Acetylene torch. Heating temperature was 300ºC to 350ºC. Heat straightening personnel follow the approved heat straightening procedure.

1. Bearing Bottom Housing (B1-07/F07302-010): Completed blasting and painting.
2. Bearing Bottom Housing (B2-07/F07302-020): Completed blasting and painting.
3. Bearing Bottom Housing (B3-07/F07302-030): Completed blasting and painting.
4. Bearing Bottom Housing (B4-07/F07302-040): Completed blasting and painting.
5. Spherical Ring (S1-07/F07302-050): Continue final machining.
6. Spherical Ring (S2-07/F07302-060): Continue final machining.
7. Spherical Ring (S3-07/F07302-070): Continue final machining.
8. Spherical Ring (S4-07/F07302-080): Continue final machining.

9. Solid Shaft (B1-02/F07302-090): Continue final machining.
10. Solid Shaft (B2-02/F07302-100): Continue final machining.
11. Solid Shaft (B3-02/F07302-110): Continue final machining.
12. Solid Shaft (B4-02/F07302-120): Continue final machining.

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

Casting

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.

HMIC NDT technician Mr. DY. Whang and Mr. GT. Kim performed final MT on Bearing Top Housing and Shear Key housing after final machining. QA inspector checked following items prior to testing: Calibration Date, AC lifting power, and Pie gauge sensitivity. MPT used Yoke probe with wet visible particles.

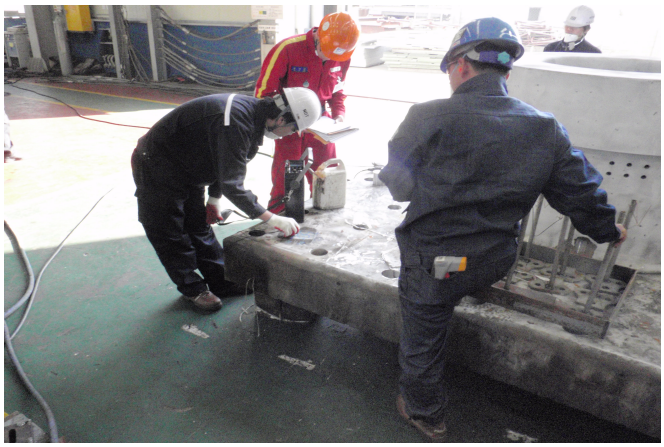
On this date HMIC Qualified welder Mr. O. J. Park started minor repair welding on Bearing Top Housing. QA inspector and HMIC QC Inspector verified welding parameters prior to start welding. Welding process utilized Gas Tungsten Arc Welding (GTAW) with ER70S-6 with diameter 2.4mm, rod manufactured by Hyundai Steel, brand name ST-50.6 with 100% Argon gas. QA inspector verified welding parameters range of 15-17 volts, 200-245 amps, travel speed 74-89mm/min, Gas flow 12-15little/min. preheat temperature over 150ºC and interpass temperature was less then 250º C. After completed repair welding HMIC increased preheat to 300ºC for PWHT and covered by heat blanket for slow cool down. All of welding parameters comply with approved welding procedure specification No. A-T-Z1Z1-147.

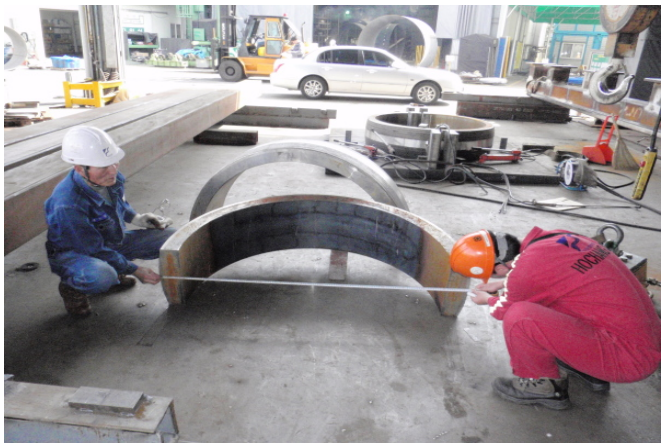
1. Bearing Top Housing (B1-06, C07039-010): Continue minor repair welding.
2. Bearing Top Housing (B2-06, C07039-020): Completed minor repair welding.
3. Bearing Top Housing (B3-06, C07039-030): Completed minor repair welding.
4. Bearing Top Housing (B4-06, C07039-040): Continue minor repair welding.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

18. Shear key Housing (S2-03, C07039-140): Continue final machining.
19. Shear key Housing (S3-03, C07039-150): Continue final machining.
20. Shear key Housing (S4-03, C07039-160): Continue final machining.

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

On this date HMIC Certified welder Mr. GH. Lee started welding on bearing plate. QA inspector and HMIC QC inspector checked welding parameters prior to welding. Welding process utilized Flux Core Arc Welding (FCAW) with ER 309LMoTo-1 DW 309Mol (Kobe Steel) with diameter 1.2mm wire. Amperage was 135 (Root) 190 (fill and Cap), Voltage was 28, gas flow 25 l/Min. All welding parameters comply with approved welding procedure specifications No WPS-GT-011.





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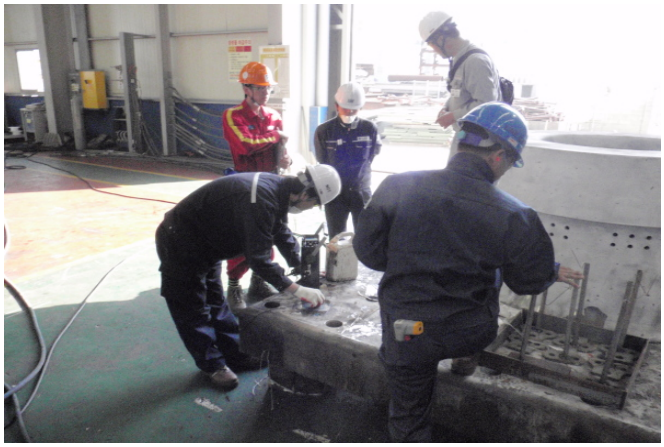

Summary of Conversations:

*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:	Edmondson,Fred	QA Reviewer