

**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 #: 73.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-009700**Date Inspected:** 01-Oct-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1800**Contractor:** HoChang, Korea**Location:** Unyang, Korea

<b>CWI Name:</b>	Sang Ho Kwak		
<b>Inspected CWI report:</b>	Yes	No	N/A
<b>Electrode to specification:</b>	Yes	No	N/A
<b>Qualified Welders:</b>	Yes	No	N/A
<b>Approved Drawings:</b>	Yes	No	N/A

<b>CWI Present:</b>	Yes	No	
<b>Rod Oven in Use:</b>	Yes	No	N/A
<b>Weld Procedures Followed:</b>	Yes	No	N/A
<b>Verified Joint Fit-up:</b>	Yes	No	N/A
<b>Approved WPS:</b>	Yes	No	N/A
<b>Delayed / Cancelled:</b>	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**

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.

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- 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. QA inspector checked following items prior to testing: Calibration Date, AC lifting power, and Pie gauge sensitivity. MPT method used was Yoke probe with wet visible particles.

Samjeon NDT technician Mr. SH. Lee performed ultrasonic testing on retainer bracket. Ultrasonic testing used straight beam, and angle beam transducers. QA inspector checked calibration date, set up of equipment, calibration and calibration blocks.

Straight beam: 2 MHz Dia. 24mm.

Angle beam: 2MHz size: 20 x 22 mm.

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

1. Bearing Top Housing (B1-06, C07039-010): Continue final machining at HMIC
2. Bearing Top Housing (B2-06, C07039-020): Continue minor repair welding.
3. Bearing Top Housing (B3-06, C07039-030): Continue minor repair welding.
4. Bearing Top Housing (B4-06, C07039-040): Continue final machining at HMIC.
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): Continue final machining.
14. Shear Key Stub (S2-01, C07039-100): Continue final machining.
15. Shear Key Stub (S3-01, C07039-110): Continue final machining.

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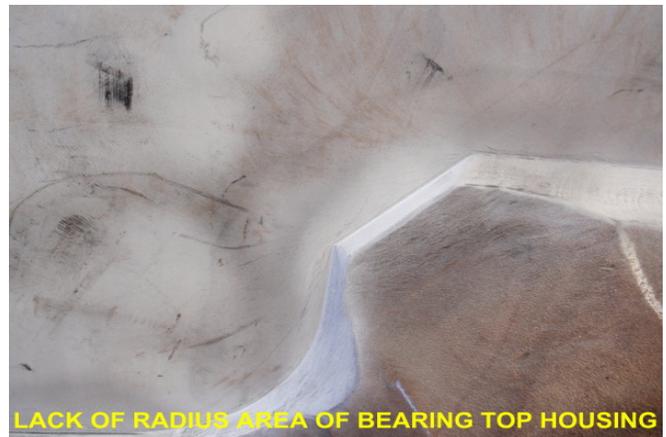
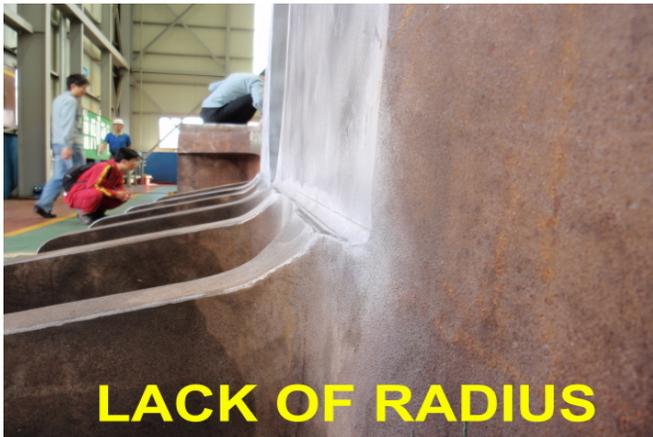
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16. Shear Key Stub (S4-01, C07039-120): Continue final machining.
17. Shear key Housing (S1-03, C07039-130): Continue final machining.
18. Shear key Housing (S2-03, C07039-140): Continue final machining.
19. Shear key Housing (S3-03, C07039-150): Continue 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.



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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.

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<b>Inspected By:</b>	Shin,DJ	Quality Assurance Inspector
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<b>Reviewed By:</b>	Lanz,Joe	QA Reviewer
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