

**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-011057**Date Inspected:** 01-Dec-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 (HMI). On this date the Caltrans Quality Assurance (QA) inspector, Dong J. Shin arrived at HoChang Machinery Industries (HMI) 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**

On this date HMIC Qualified welder Mr. C. K. Jang performed minor repair welding on stainless steel overlay areas of the solid shafts. The QA inspector and HMIC QC inspector verified the welding parameters prior to start of welding. The welding process utilized Gas Tungsten Arc Welding (GTAW) with ER316-L filler metal with a diameter of 2.0mm, manufactured by Hyundai Steel, brand name ST-316L with 100% Argon gas. QA inspector observed the welding parameters range was 13-15 volts, 150-180 amps, travel speed 53-65mm/min, Gas flow 10-20 liter/min., preheat temperature over 50°C and interpass temperature of less than 177° C. All of welding parameters appear to comply with approved welding procedure specifications No. GT-013.

1. Bearing Bottom Housing (B1-07/F07302-010): Completed painting.
2. Bearing Bottom Housing (B2-07/F07302-020): Completed painting.
3. Bearing Bottom Housing (B3-07/F07302-030): Completed painting.
4. Bearing Bottom Housing (B4-07/F07302-040): Completed painting.
5. Spherical Ring (S1-07/F07302-050): Continue final machining.

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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): Complete minor repair.
  10. Solid Shaft (B2-02/F07302-100): Complete minor repair.
  11. Solid Shaft (B3-02/F07302-110): Complete minor repair.
  12. Solid Shaft (B4-02/F07302-120): Complete minor repair.
- 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 (HMI) located at Unyang, Korea and DooSan Heavy Industries(DHI) located at Changwon, Korea. The purpose of this trip was to observe quality control during fabrication and process of following items.

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

\* S and B number is drawing number.

\* C number is DHI 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

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your project.

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