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 #: 99.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027585
Date Inspected: 25-Apr-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Lubrite Industries

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Meadville PA

CWI Name:	Brad McWright		**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: Anchor Plates

Summary of Items Observed:

This Quality Assurance Inspector (QAI) arrived at Lubrite Industries (LI), Meadville PA, as requested to monitor welding of Anchor Studs to Anchor Plates of Bearing Housings.

Upon arrival this QAI met with Third Party QC Reno Davis KTA, and Brad McWright. Approved WPS was supplied as well as MTR for 1" x 8 ¼" Anchor Studs. Per approved WPS Anchor Stud Material is to be ASTM A108/A29 Grade 1015. Mechanical Properties are to meet AWS D1.5:2002 Table 7.1 Type B. In reviewing Table 7.1 it was noted that the Table only applies to studs ½" to 7/8" OD. Type B does not apply to 1" studs and MTR does not list any reference to Type B. Stud Mechanical Properties do meet the Properties listed in the Table.

Welding of studs began with the welding of (4) studs to a test plate following all parameters listed in WPS 9103818. The Stud Gun used was the proper gun qualified. The first (4) studs were welded with no apparent problems and (2) of the studs were chosen for the bend test which verified full fusion at the base.

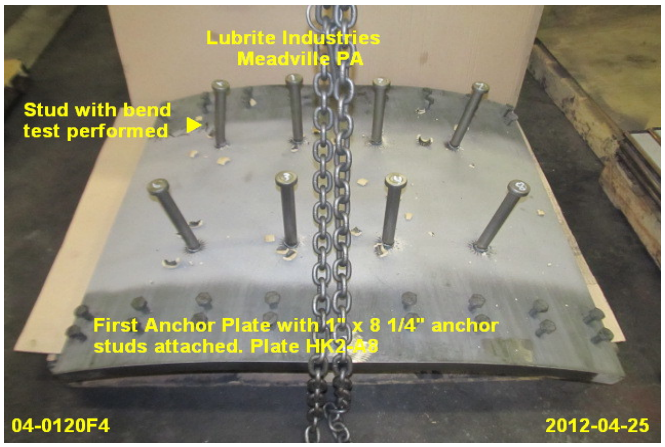
The first production piece was brought out with stud locations laid out per approved drawing. This QAI witnessed the Third Party Inspector (TPI) inspect the dimensions and release the part for welding. The part number stamped on the piece is HK2-A8. The (8) studs were welded to the production with no visual flaws noted in welds. One of the studs was picked by the TPI for performance of a bend test. The anchor stud was bent to a 15 deg angle with no sign of pulling off the base metal.

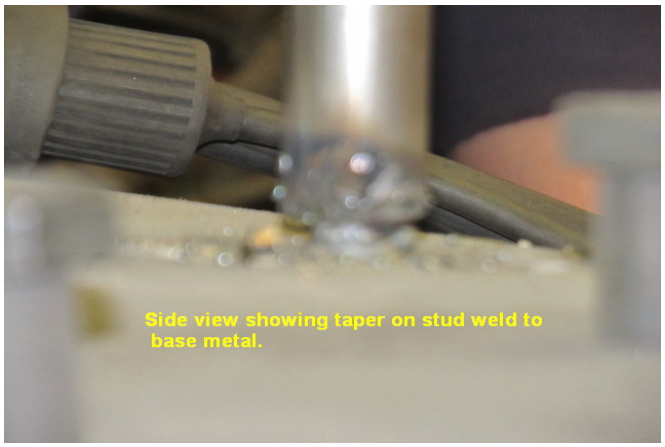
A second production piece, HK2-A7, was brought out. Dimensions verified by the TPI and welding started. The first (4) anchor studs were welded without incident. On the fifth stud there was a gun malfunction which caused the stud to be destroyed at the base where the stud meets the base metal. The damage done to the anchor stud is non repairable. Damage was also witnessed in the base metal with a 1/8" deep x 3/8" wide crater in the top of the plate. (See attached photos) The welder and LI QC reviewed the parameters of the gun and weld equipment. New test anchor studs were welded to a test piece successfully and it was decided to proceed with welding of the studs

to the production piece. Another anchor stud was welded to the production piece successfully and then on the seventh stud the gun malfunctioned again. It was decided by LI QC and Upper Management that welding would be stopped at this time and that the vendor of the studs and stud gun would be brought in to resolve the problem. This QAI, the TPI and LI QC then discussed the problem and LI QC was informed that a repair procedure had to be written and submitted to Caltran for acceptance before repairing the damaged base metal.

In a review of production of other parts in process this QAI was shown (3) of the main Bronze Bearings had been counter bored with the required lubrication holes and were ready for the application of the lube and the sealant used to keep the lube in place. Also another of the stainless steel housing assemblies had been taken off the machine after completing machining operations. (Pictures attached)

The items observed appear in general conformance with the contract documents and approved drawings





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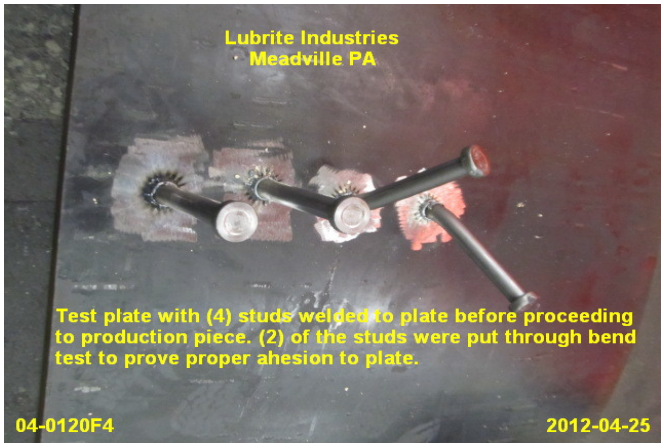

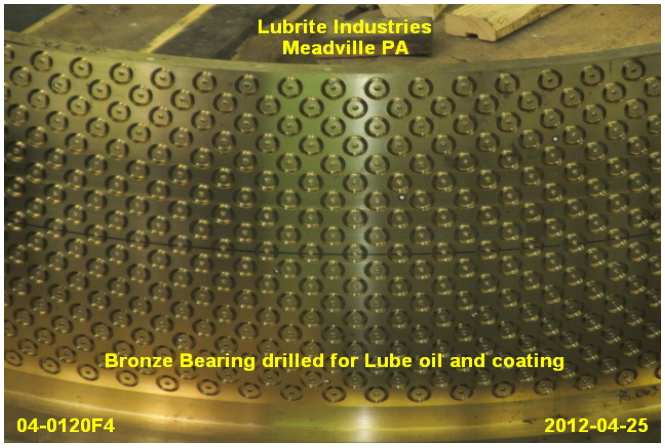

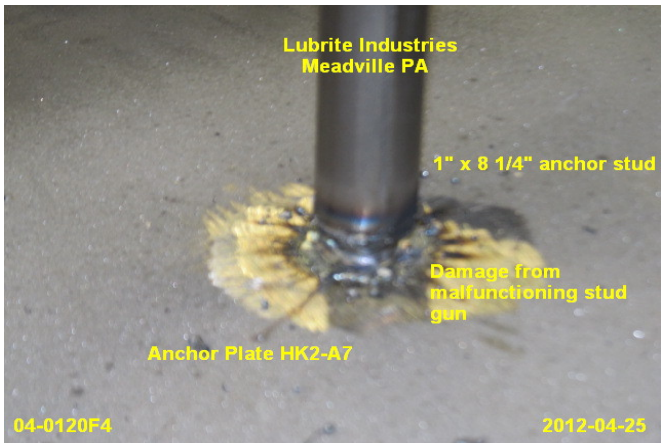

Summary of Conversations:

Basic conversation, fundamental to completion of the tasks at hand, occurred between this QAI and DSB QC Personnel.

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 , who represents the Office of Structural Materials for your project.

Inspected By:	Sullivan,Kevin	Quality Assurance Inspector
Reviewed By:	Foerder,Mike	QA Reviewer