U.S. Department
of Transportation
Federal Highway
Administration

400 Seventh St., S.W.
Washington, D.C. 20590

February 8, 2005

In Reply Refer To: HSA-10/LS-58

Mr. Bob Sik
Vice President
Akron Foundry Company
2728 Wingate Avenue
P.O. Box 27028
Akron, Ohio 44319-0009

Dear Mr. Sik:

Thank you for your January 6 letter sent via email requesting Federal Highway Administration (FHWA) acceptance of a modification to the installation of your company's cast aluminum transformer bases. You requested that we find the use of "stack pack" rectangular washers with these bases acceptable for use on the National Highway System (NHS) under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

**Introduction**
Testing of the supports was in compliance with the guidelines contained in the NCHRP Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features. Requirements for breakaway supports are those in the American Association of State Highway and Transportation Officials' (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

**Testing**
Full-scale automobile testing and pendulum testing has been conducted on your company's cast aluminum bases resulting in a number of the FHWA acceptance letters being written. You noted that some installers have been placing your bases on smaller bolt circles than they have been designed for. Using conventional round washers does not provide enough contact between the anchor bolts and the tabs on the bottom of the casting. The purpose of the rectangular washers is to better distribute the loading from the pole to the foundation. We concur in your assertion that the use of smaller diameter bolt circles with the stack pack

washers used to distribute the load will not have an adverse affect on the breakaway performance of these transformer bases. However, the washers should not be used to distribute the loading outside of diameter of the largest bolt circle they were tested with.

**Findings**
The modifications to the installation details of your cast aluminum transformer bases, as described above, are acceptable for use as Test Level 3 devices on the NHS under the range of conditions tested, with the exception of the use of a smaller bolt circle diameter, when proposed by a State.

Please note the following standard provisions, which apply to the FHWA letters of acceptance:

- Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was crash tested, it reserves the right to modify or revoke its acceptance.
- You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- You will be expected to certify to potential users that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that they will meet the crashworthiness requirements of the FHWA and the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number LS-58 shall not be reproduced except in full. As this letter and the supporting documentation which support it become public information, it will be available for inspection at our office by interested parties.
- Akron Foundry are patented devices and considered "proprietary." When proprietary devices are *specified by a highway agency* for use on Federal-aid projects they: (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists or; (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. These provisions do not apply to exempt non-NHS projects. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed.

- This acceptance letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented device. Patent issues are to be resolved by the applicant and the patent owner.

Sincerely yours,

***/Original Signed by Harry W. Taylor/***

***~for~***

John R. Baxter, P.E.
Director, Office of Safety Design
Office of Safety

Enclosure

FHWA:HSA-10:NArtimovich:tb:x61331:2/7/05
File: h://directory folder/artimovich/LS58AkronFIN
cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;
N.Artimovich, HSA-10)