U.S. Department
Of Transportation
Federal Highway
Administration

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

May 13, 1986

Refer to: HNG-21/SS-01

Mr. H. Mike Jordan
Product Manager
Southwestern Pipe, Inc.
P.O. Box 2002
Houston, Texas 77252-2002

Dear Mr. Jordan:

This is in response to your April 8 letter requesting Federal highway Administration (FHWA) acceptance of certain sizes of your company's Type "A" Small Sign Support System for use on Federal-aid highway projects. You also enclosed a copy of a POZ-LOC Anchor System brochure and a Southwest Research Institute Report No. 06-8909-001 dated November 1985 containing full-scale crash test information.

After reviewing the report and discussing it with Mr. Maurice Bronstad of the Southwest Research Institute, we received a revised report dated April 1986. The revised report provides additional details on some information contained in the earlier report. The tested sign support system consisted of a 2 7/8-inch O.D. by .109 galvanized tubular socket that was driven into soil meeting the National Cooperative Highway Research Program (NCHRP) Report No. 230 strong soil (S-1) criteria. A 2 3/8-inch O.D. 13 gauge (.095) signpost was inserted into the socket and the post locked into position with a 2 7/8-inch by 2 3/8-inch x 11-gauge post wedge. Enclosed is a figure showing the sign support details.

Two full-scale tests were conducted with a 1,812-pound vehicle; one at 20.2 m.p.h. and the second at 60.3 m.p.h. Reported tests results using accelerometer data indicate a change of velocity of 9.9 feet/second and 5.9 feet/second, respectively. These translate to a change of momentum of 557 pound/seconds and 332 pound/seconds, respectively. These figures show that the tested system meets the change of velocity provisions of the new, but yet unpublished, 1985 American Association of State Highway and Transportation Officials (AASHTO) "Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals". Therefore, the system is acceptable for use on Federal-aid projects within the range of conditions tested, if proposed by a State. Further, we have determined that only one post should be allowed within an 8-foot path. We note this system was only tested in the S-1 strong soil described in NCHRP 230. If

you desire to use this system in soil equivalent to the S-2 soil described in NCHRP Report 230, we recommend additional tests be conducted in that soil type.

Your letter also requested our acceptance of a POZ-LOC anchor system that you stated is comprised of the same socket, wedge, and post O.D. as the tested system only the post wall thickness is reduced from .095 to .080. We note your brochure shows another post having an even thinner wall thickness of .065. If these posts have essentially the same mechanical and chemical properties and geometry as the tested post, we infer they also are acceptable for use on Federal-aid highway projects within the range of conditions tested, if proposed by a State. Again, only one post per 8-foot path is permitted, unless you desire to conduct additional tests for these thinner-wall posts showing two posts should be allowed.

Your brochure also shows a 2 3/8-inch O.D. post having a wall thickness of .109 which is greater than the system tested. We cannot, without further testing, provide acceptance of the post for Federal-aid highway projects. Since your brochure implies FHWA acceptance of all your posts, including the .109 thickness, we request you take appropriate steps to ensure that highway officials are aware of the post sizes we are accepting. Your submission also included drawings of a POZ-LOC Socket Splice Connector. Since crash tests were not conducted with the splice connector, we have not included them in our acceptance. We are uncertain of how the system will perform with these splice connectors.

This acceptance is limited to breakaway characteristics of the system described above and does not cover its structural features. Presumably, Southwestern Pipe, Inc., will supply potential users with sufficient information o structural design and installation requirements to ensure proper support performance.

We anticipate that the States will require certification from Southwestern Pipe, Inc., that materials furnished have essentially the same chemistry, mechanical properties, and geometry as the materials used in the tests and that the support will meet the change in velocity requirements of the 1985 AASHTO specification.

Sincerely yours,

Norman J. Van Ness, Chief
Highway Design Division

Enclosure

(continued

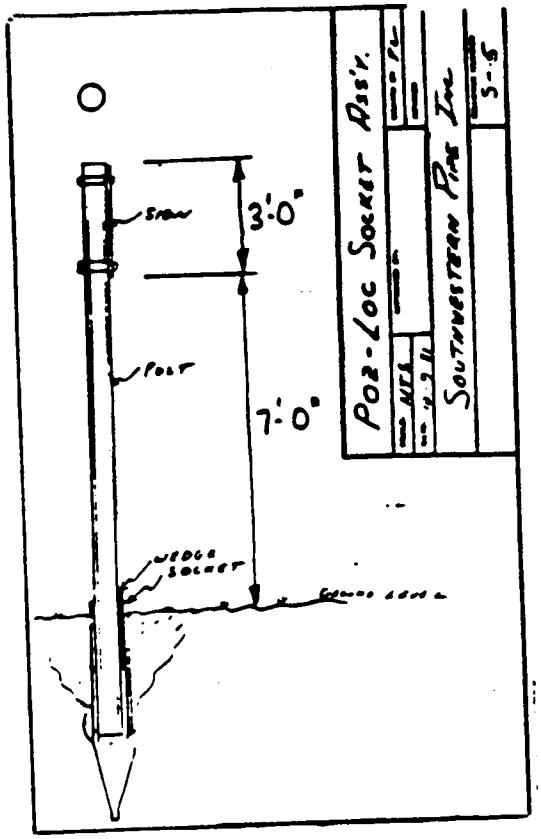
POZ-LOC SIGN POST ANCHOR SYSTEM

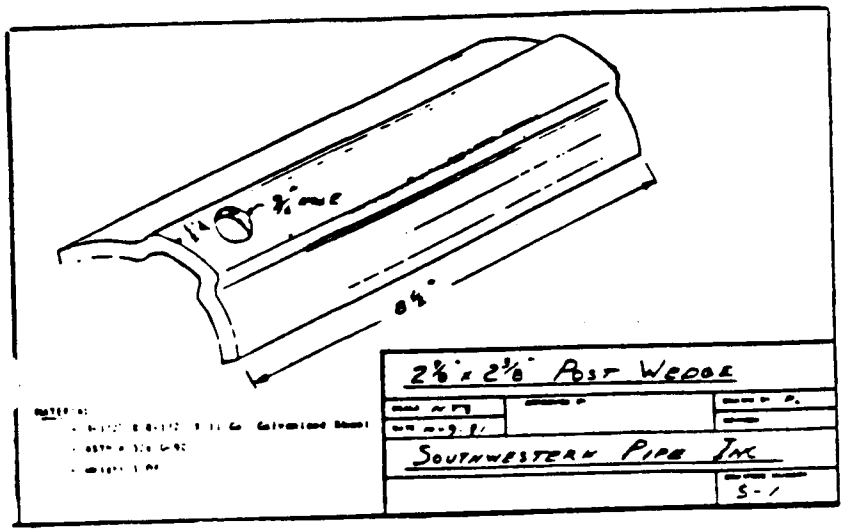
POZ-LOC Sign Post Anchor System is a tubular socket system designed to be used small sign supports. The assembly consists of:

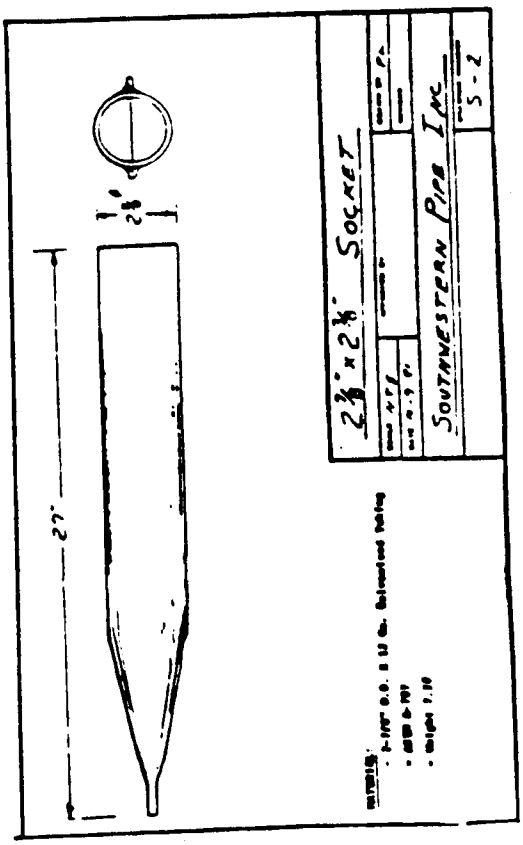
1. A tubular socket 2-7/8" O.D. X 12 GA wall thickness X 27" long. The socket is pointed to facilitate driving into the ground and accept a standard 2-1/8" O.D. sign post, which inserts into the socket.
2. A wedge which is driven between the socket and the post and functions to lock the post into the socket.
3. Sign mounting brackets which clamp onto the post. These brackets allow the sign to be mounted at any angle or front and back of the post.

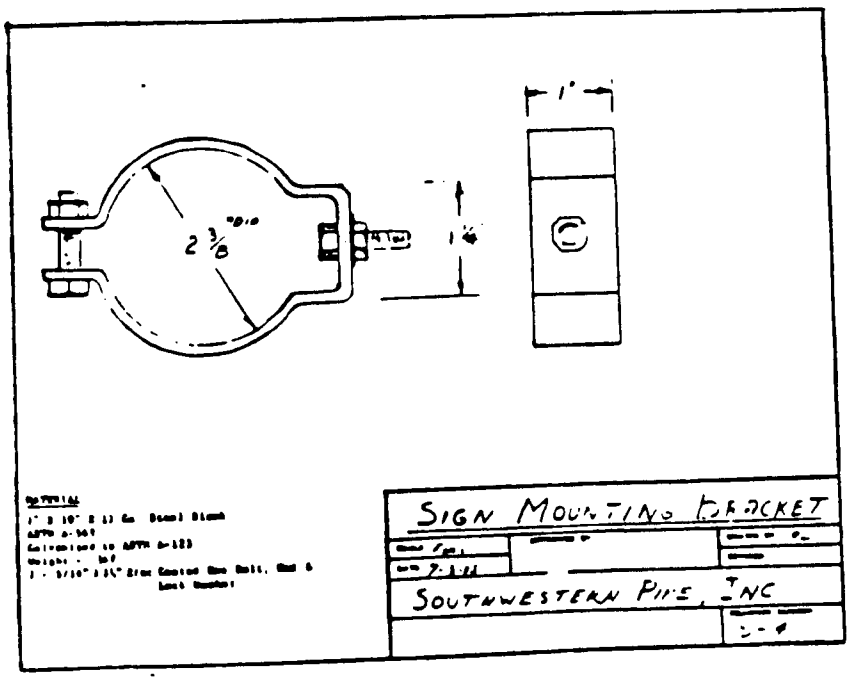
Should the post be damaged, or otherwise need to be removed, the wedge can be removed with a wedge puller, another post inserted, and the wedge replaced without disturbing the footing. The use of a special wedge puller discourages vandalism of the sign system. This system does not require any nuts or bolts for installation of the socket system.

The attached drawings illustrate the assembly and each of the parts.









SMALL SIGN SUPPORT DETAILS.