U.S. Department
of Transportation
Federal Highway
Administration

1200 New Jersey Ave., SE
Washington, D.C. 20590

March 4, 2016

In Reply Refer To:
HSST/SS-67A

Mr. James Young
Franklin Industries Co.
645 Atlantic Ave.
Franklin, PA 16323

Dear Mr. Young:

This letter is in response to your September 1, 2015 request for the Federal Highway Administration (FHWA) to review a roadside safety device, hardware, or system for eligibility for reimbursement under the Federal-aid highway program. This FHWA letter of eligibility is assigned FHWA control number SS-67A and is valid until a subsequent letter is issued by FHWA that expressly references this device.

**Decision**

The following devices are eligible, with details provided in the form which is attached as an integral part of this letter:

- Franklin Base Bolted Sign Support (Franklin Splice)

**Scope of this Letter**

To be found eligible for Federal-aid funding, modified roadside safety devices should meet the crash test and evaluation criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350. However, the FHWA, the Department of Transportation, and the United States Government do not regulate the manufacture of roadside safety devices. Eligibility for reimbursement under the Federal-aid highway program does not establish approval, certification or endorsement of the device for any particular purpose or use.

This letter is not a determination by the FHWA, the Department of Transportation, or the United States Government that a vehicle crash involving the device will result in any particular outcome, nor is it a guarantee of the in-service performance of this device. Proper manufacturing, installation, and maintenance are required in order for this device to function as tested.

This finding of eligibility is limited to the crashworthiness of the system and does not cover other structural features, nor conformity with the Manual on Uniform Traffic Control Devices.

**Eligibility for Reimbursement**

FHWA previously issued an eligibility letter for the roadside safety system described in your pending request. Your pending request now identifies a modification to that roadside safety system.
The original roadside safety device information is provided here:

Name of system: Franklin Flanged-Channel Sign Support
Type of system: Sign Support
Date of original request: August 1, 1996
Date of original FHWA eligibility letter: September 9, 1996
FHWA Control number: SS-67

The pending modification(s) consists of the following changes:

1. Use of a treaded spacer between the sign post and the base post

FHWA concurs with the recommendation of the accredited crash testing laboratory as stated within the attached form.

**Full Description of the Eligible Device**

The device and supporting documentation, including reports of the crash tests or other testing done, videos of any crash testing, and/or drawings of the device, are described in the attached form.

**Notice**

If a manufacturer makes any modification to any of their roadside safety hardware that has an existing eligibility letter from FHWA, the manufacturer must notify FHWA of such modification with a request for continued eligibility for reimbursement. The notice of all modifications to a device must be accompanied by:

- Significant modifications – For these modifications, crash test results must be submitted with accompanying documentation and videos.
- Non-signification modifications – For these modifications, a statement from the crash test laboratory on the potential effect of the modification on the ability of the device to meet the relevant crash test criteria.

FHWA's determination of continued eligibility for the modified hardware will be based on whether the modified hardware will continue to meet the relevant crash test criteria.

You are expected to supply potential users with sufficient information on design, installation and maintenance requirements to ensure proper performance.

You are expected to certify to potential users that the hardware furnished has the same chemistry, mechanical properties, and geometry as that submitted for review, and that it will meet the test and evaluation criteria of the NCHRP Report 350.

Issuance of this letter does not convey property rights of any sort or any exclusive privilege. This letter is based on the premise that information and reports submitted by you are accurate and correct. We reserve the right to modify or revoke this letter if: (1) there are any inaccuracies in the information submitted in support of your request for this letter, (2) the qualification testing was flawed, (3) in-service performance or other information reveals safety problems, (4) the system is significantly different from the version that was crash tested, or (5) any other information indicates that the letter was issued in error or otherwise does not reflect full and complete information about the crashworthiness of the system.

**Standard Provisions**

- To prevent misunderstanding by others, this letter of eligibility designated as FHWA control number SS-67A shall not be reproduced except in full. This letter and the test documentation upon which it is based are public information. All such letters and documentation may be reviewed upon request.

- This letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented system for which the applicant is not the patent holder.

- If the subject device is a patented product it may be considered to be proprietary. If proprietary systems are specified by a highway agency for use on Federal-aid projects: (a) they must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with the 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. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411.

Sincerely yours,

Michael S. Griffith

Michael S. Griffith
Director, Office of Safety Technologies
Office of Safety

Enclosures

# Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

| | | | |
|---|---|---|---|
| Submitter | Date of Request: | September 1, 2015 | ◉ New ○ Resubmission |
| | Name: | James Young | |
| | Company: | Franklin Industries Co. | |
| | Address: | 645 Atlantic Ave., Franklin, PA 16323 | |
| | Country: | USA | |
| | To: | Michael S. Griffith, Director<br>FHWA, Office of Safety Technologies | |

I request the following devices be considered eligible for reimbursement under the Federal-aid highway program.

| System Type | Submission Type | Device Name / Variant | Testing Criterion | Test Level |
|---|---|---|---|---|
| 'SS': Breakaway Sign Supports, Mailboxes, & other small sign supports | ○ Physical Crash Testing<br>◉ Engineering Analysis | Franklin Base Bolted Sign Support (Franklin Splice) | NCHRP Report 350 | TL3 |

By submitting this request for review and evaluation by the Federal Highway Administration, I certify that the product(s) was (were) tested in conformity with the NCHRP Report 350 (Report 350) and that the evaluation results meet the appropriate evaluation criteria in the Report 350.

Identification of the individual or organization responsible for the product:

| | | |
|---|---|---|
| Contact Name: | James Young | Same as Submitter ☐ |
| Company Name: | Franklin Industries Co. | Same as Submitter ☐ |
| Address: | 645 Atlantic Ave., Franklin, PA 16323 | Same as Submitter ☐ |
| Country: | USA | Same as Submitter ☐ |

Enter below all disclosures of financial interests as required by the FHWA `Federal-Aid Reimbursement Eligibility Process for Safety Hardware Devices' document.

TTI was compensated for the analysis of sign support but has no other financial interests in the sign supports being submitted to FHWA for use on the National Highway System. No further compensation is being given to TTI.
TTI understands financial interests, defined by FHWA, include but are not limited to —
(i) Compensation, including wages, salaries, commissions, professional fees, or fees for business referrals;
(ii) Consulting relationships
(iii) Research funding or other forms of research support; (See comment above)
(iv) Patents, copyrights, and other intellectual property interests;
(v) Licenses or contractual relationships; or
(vi) Business ownership and investment interests.

# PRODUCT DESCRIPTION

| ○ New Hardware or Significant Modification ◉ Modification to Existing Hardware | Non-Significant |
|---|---|
| Franklin produces U-channel sign supports from 2 to 4 lb/ft which are used in a spliced, base and upright, system comprised of two generic non-threaded spacers and grade 9 bolts on 4" centers at ground level. The requested modification is to add the option of threaded spacers, should users so desire. Franklin received FHWA acceptance for non-threaded spacers based on testing by TTI for ADOT, to AASHTO 1985 Guide criteria and NCHRP 230, in SS-20. Franklin's spliced system was re-certified to NCHRP 350 criteria by FHWA in SS-67, based on FHWA's Memorandum of July 25, 1997 titled "Identifying Acceptable Highway Safety Features". Franklin is seeking acceptance of threaded spacers (shown on the attached drawings) in addition to its already accepted non-threaded spacers. This change is non-significant | |

# CRASH TESTING

A brief description of each crash test and its result:

| Required Test Number | Narrative Description | Evaluation Results |
|---|---|---|
| 3-60 (820C) | In test 7024-24 and 7024-26 of Report HPR-PL-1-31 (202), TTI tested generic spliced U-channel systems for ADOT. Details of the tests are attached. Spliced connections used grade 9 bolts on 4 inch centers with non-threaded spacers. FHWA accepted Franklin sign supports for up to three 3 lb/ft and up to two 4 lb/ft, in SS-20, based on this testing. Franklin's spliced system was re-certified to NCHRP 350 criteria by FHWA in SS-67, based on FHWA's Memorandum of July 25, 1997 titled "Identifying Acceptable Highway Safety Features", on the basis that "...Report 350 acceptance criteria are slightly less demanding than were the criteria in the 1985 or 1994 Support Specifications or the Report 230 guidelines, breakaway hardware meeting these earlier criteria do not have to be re-qualified to be accepted under Report 350 criteria".<br><br>Franklin's spliced connection with threaded spacers will also be acceptable, as as the same bolts used in the previously accepted unthreaded spacer are used. Rupture of the bolts in the previous tests occurred under the head of the bolt or at the root of the threads. Similar performance is to be expected. | Non-Critical, not conducted |
| S3-60 (700C) | per NCHRP 350, section3.1, these tests are optional | Non-Critical, not conducted |

| Required Test Number | Narrative Description | Evaluation Results |
|---|---|---|
| 3-61 (820C) | In test 7024-25 and 7024-27 of Report HPR-PL-1-31 (202), TTI tested generic spliced U-channel systems for ADOT. Details of the tests are attached. Spliced connections used grade 9 bolts on 4 inch centers with non-threaded spacers. FHWA accepted Franklin sign supports for up to three 3 lb/ft and up to two 4 lb/ft, in SS-20, based on this testing. Franklin's spliced system was re-certified to NCHRP 350 criteria by FHWA in SS-67, based on FHWA's Memorandum of July 25, 1997 titled "Identifying Acceptable Highway Safety Features", on the basis that "...Report 350 acceptance criteria are slightly less demanding than were the criteria in the 1985 or 1994 Support Specifications or the Report 230 guidelines, breakaway hardware meeting these earlier criteria do not have to be re-qualified to be accepted under Report 350 criteria".<br><br>Franklin's spliced connection with threaded spacers will also be acceptable, as the same bolts used in the previously accepted unthreaded spacer are used. Rupture of the bolts in the previous tests occurred under the head of the bolt or at the root of the threads. Similar performance is to be expected. | Non-Critical, not conducted |
| S3-61 (700C) | per NCHRP 350, section 3.1, these tests are optional | Non-Critical, not conducted |

Full Scale Crash Testing was done in compliance with NCHRP Report 350 by the following accredited crash test Laboratory. By signature below, the Laboratory agrees in support of this submission that all critical and relevant crash tests for the device listed above were conducted. (cite the laboratory's accreditation status as noted in the crash test reports.):

| Testing Laboratory's signature concurs that these modifications are considered Non-Significant. | | |
|---|---|---|
| Laboratory Name: | Texas Transportation Institute | |
| Laboratory Signature: | Dean C. Alberson — Digitally signed by Dean C. Alberson DN: cn=Dean C. Alberson, o=Texas AM Transportation Institute, ou=Roadway Safety and Physical Security Division, email=d-alberson@tti.tamu.edu, c=US Date: 2016.02.19 13:53:10 -06'00' | |
| Address: | 3134 TAMU, College Station, TX 77843 | Same as Submitter ☐ |
| Country: | USA | Same as Submitter ☐ |
| Accreditation Certificate Number and Dates of current Accreditation period : | Accreditation Certificate number 2821.1<br>Valid from February 19, 2015 to April 30, 2017 | |

Submitter Signature*: James Young — Digitally signed by James Young DN: cn=James Young, o=Franklin Industries Co., ou, email=jyoung@franklinindustries.com, c=US Date: 2016.01.12 15:03:33 -05'00'

Submit Form

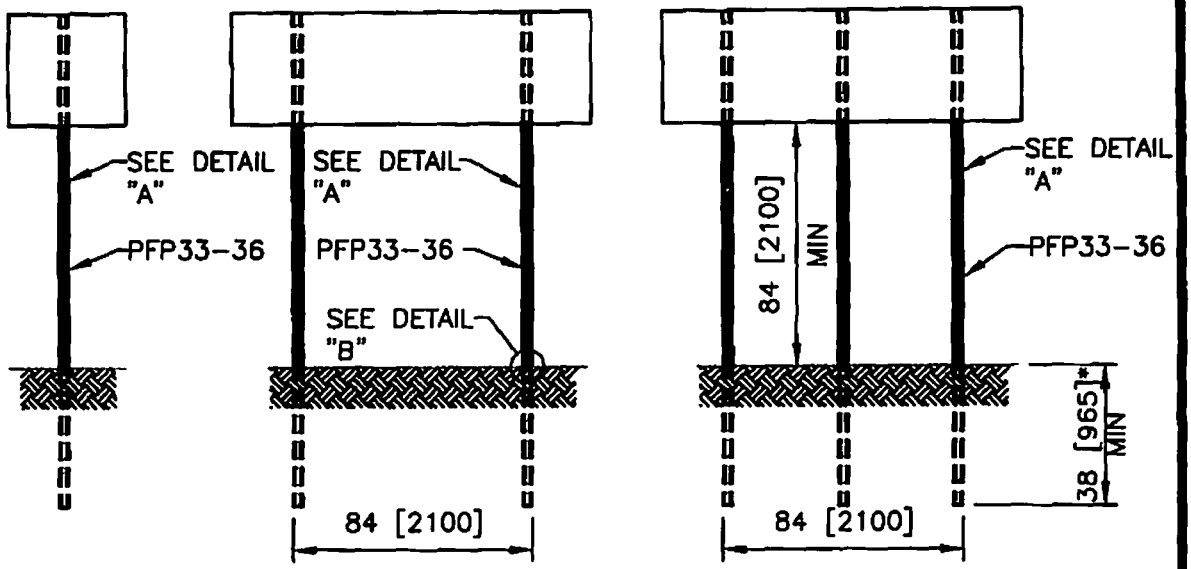
ATTACHMENTS

Attach to this form:

1) Additional disclosures of related financial interest as indicated above.
2) A copy of the full test report, video, and a Test Data Summary Sheet for each test conducted in support of this request.
3) A drawing or drawings of the device(s) that conform to the Task Force-13 Drawing Specifications [Hardware Guide Drawing Standards]. For proprietary products, a single isometric line drawing is usually acceptable to illustrate the product, with detailed specifications, intended use, and contact information provided on the reverse. Additional drawings (not in TF-13 format) showing details that are relevant to understanding the dimensions and performance of the device should also be submitted to facilitate our review.

FHWA Official Business Only:

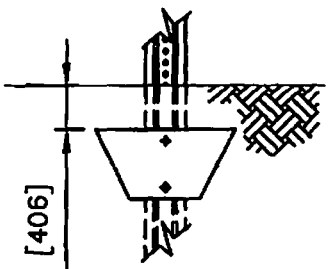
| Eligibility Letter | | AASHTO TF13 | |
|---|---|---|---|
| Number | Date | Designator | Key Words |
| SS-67A | | SSP01 a-c | sign support, U-Channel |




SSP01a SSP01b SSP01c

*60 [1500] REQUIRED IN WEAK SOIL


DETAIL "A"
CROSS SECTION



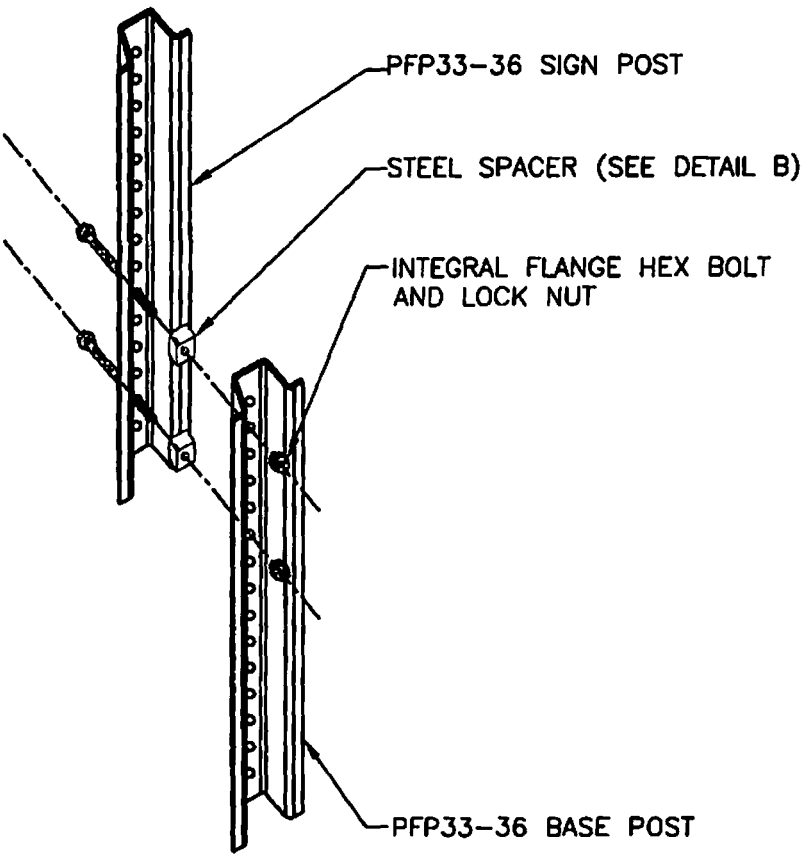

DETAIL "B"

2015

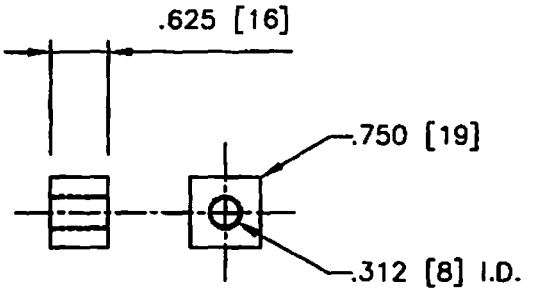
# FRANKLIN BASE-BOLTED SIGN SUPPORT SYSTEM WITH THREADED SPACER

Franklin Industries Co
Franklin, PA
(814) 437-3726
FAX: (814) 432-7556
www.franklinindustriesco.com

SSP01a-c
SHT 1 OF 3
REVISION 4/18/2015




DETAIL A: SPLICE




DETAIL B: SPACER

2015

# FRANKLIN BASE-BOLTED SIGN SUPPORT SYSTEM WITH THREADED SPACER

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SSP01a-c
SHT 3 OF 3
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## INTENDED USE

The Franklin Industries base-bolted system can be used as a single (SSP01a), double (SSP01b), or triple (SSP01c) post sign support where all posts are within 84 [2100] of each other. The system may be driven in strong or weak soil and does not require a concrete foundation, however, when installed in weak soil a soil plate is required on each sign post. These systems have been crash tested in strong and weak soil and have been judged to satisfy the requirements of 1985 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and the National Cooperative Highway Research Program Report 230.

## COMPONENTS

The Franklin Industries base-bolted system consists of three (3) components: a base post (PFP33-36), a sign post (PFP33-36) and the splice hardware. The splice hardware consists of two (2) .750 [19] diameter by .625 [16] thick steel threaded spacers and bolts and nuts. The splice bolts are 5/16 x 2-1/4 [8x57], grade 9. The splice hardware is cadmium plated in accordance with the requirements of ASTM A165-80, TYPE OS, except using clear chromate.

## REFERENCES


L.A. Staron "Breakaway Sign Supports" Geometric and Roadside Design Acceptance Letter, Fedaral Highway Administration, Washington D.C., August 31, 1989

L.A. Staron "Breakaway Sign Supports" Geometric and Roadside Design Acceptance Letter, Fedaral Highway Administration, Washington D.C., September 20, 19.

S.I. Sillan "Breakaway Sign Supports" Geometric and Roadside Design Acceptance Letter SS-59, Fedaral Highway Administration, Washington D.C., March 7, 1996

S.I. Sillan "Breakaway Sign Supports" Geometric and Roadside Design Acceptance Letter SS-67, Fedaral Highway Administration, Washington D.C., September 9, 1996


## CONTACT INFORMATION


Franklin Industries Co
P.O. Box 671
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(814) 437-3726
FAX: (814) 432-7556


2015

FRANKLIN BASE-BOLTED SIGN SUPPORT SYSTEM
WITH THREADED SPACER

SSP01a-c
SHT 2 OF 3
REVISION 4/18/2015


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