U.S. Department of Transportation
Federal Highway Administration

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

January 26, 2010

In Reply Refer To:
HSSD/SS-161

Mr. Thomas Burnham
Vice President of Services
Spot Devices
1455 Kleppe Lane
Sparks, NV 89431

Dear Mr. Burnham:

Thank you for your letter of November 30, 2009, requesting the Federal Highway Administration's (FHWA) acceptance of your company's School Zone Flashing Beacon system mounted to a schedule 40 galvanized steel pole on a Pelco 5300 series break-away base as a crashworthy system for use on the National Highway System (NHS). Accompanying your letter was a drawing of this system (enclosed for reference) and system specifications, typical of the largest and heaviest system you offer. You requested that we find the systems acceptable for use on the NHS under the provisions of the National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

The enclosed diagram shows a common pole layout. You noted in some cases this setup will also have an additional side of pole solar panel mounted just below the top of pole solar panel, and this may take up an additional 24 inches of pole height, so the total pole height would be 17 feet. The Schedule 40 galvanized steel poles, threaded at one end, conform to ASTM A53 specifications. The diagram also shows the significant holes that would be drilled in the pole -- one 2.25-inch hole for each beacon, and four closely spaced 1.125-inch holes for the controller wiring. The height of the lowest hole will be no lower than 84 inches above the ground.

Weights of the significant components are:

- Beacons: 23 pounds each
- Sign: 15 pounds
- Controller (with lead acid battery, mounted above sign): 100 pounds
- Solar panels: 20 pounds each

Dimensions:

- Beacons: The backplanes are 24 inches x 24 inches
- Sign: 24 inches x 48 inches
- Controller: 14 inches x 8 inches x 24 inches
- Solar panels: 30 inches W x 20 inches H, mounted at a 45 degree angle.

Systems that Spot Devices requested acceptance for are:

- Crosswalk warning beacons that are pushbutton activated
- Crosswalk warning Rectangular Rapid Flashing Beacons
- School zone warning beacons

You referenced three FHWA Acceptance Letters, SS-90, dated August 18, 2000, SS-143, dated November 29, 2006, and SS-155, dated October 2, 2007. These systems are similar to the Spot Devices systems in that they include signs, lights, and other hardware on breakaway poles. The Spot Devices system detailed above is heavier than the systems accepted in the letters you referenced. However, as the mass of the hardware serves to increase the center of gravity of the system, it will allow the pole to rotate over the vehicle at a higher elevation but have little effect on the performance of a crashworthy breakaway base.

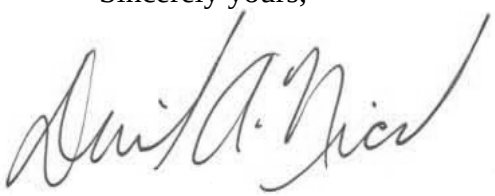
Therefore, the systems described in the requests above and detailed in the enclosed drawing are acceptable for use on the NHS under NCHRP Report 350 Test Level 3 conditions when such use is acceptable to a highway agency. This acceptance will be limited to use with Schedule 40 steel poles mounted on the Pelco cast aluminum bases you referenced (FHWA Acceptance Letter B-18 dated May 5, 1992) on generic four-bolt breakaway slip bases or on a comparable breakaway base using crashworthy frangible couplings.

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

- This acceptance is limited to the crashworthiness characteristics of the systems 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 system will require a new acceptance letter.
- Should the FHWA discover that in-service performance reveals unacceptable safety problems, or that the system being marketed is significantly different from the versions that were accepted, we reserve the right to modify or revoke our 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 it will meet the crashworthiness requirements of the FHWA and the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance is designated as number SS-161 and 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 at our office upon request.

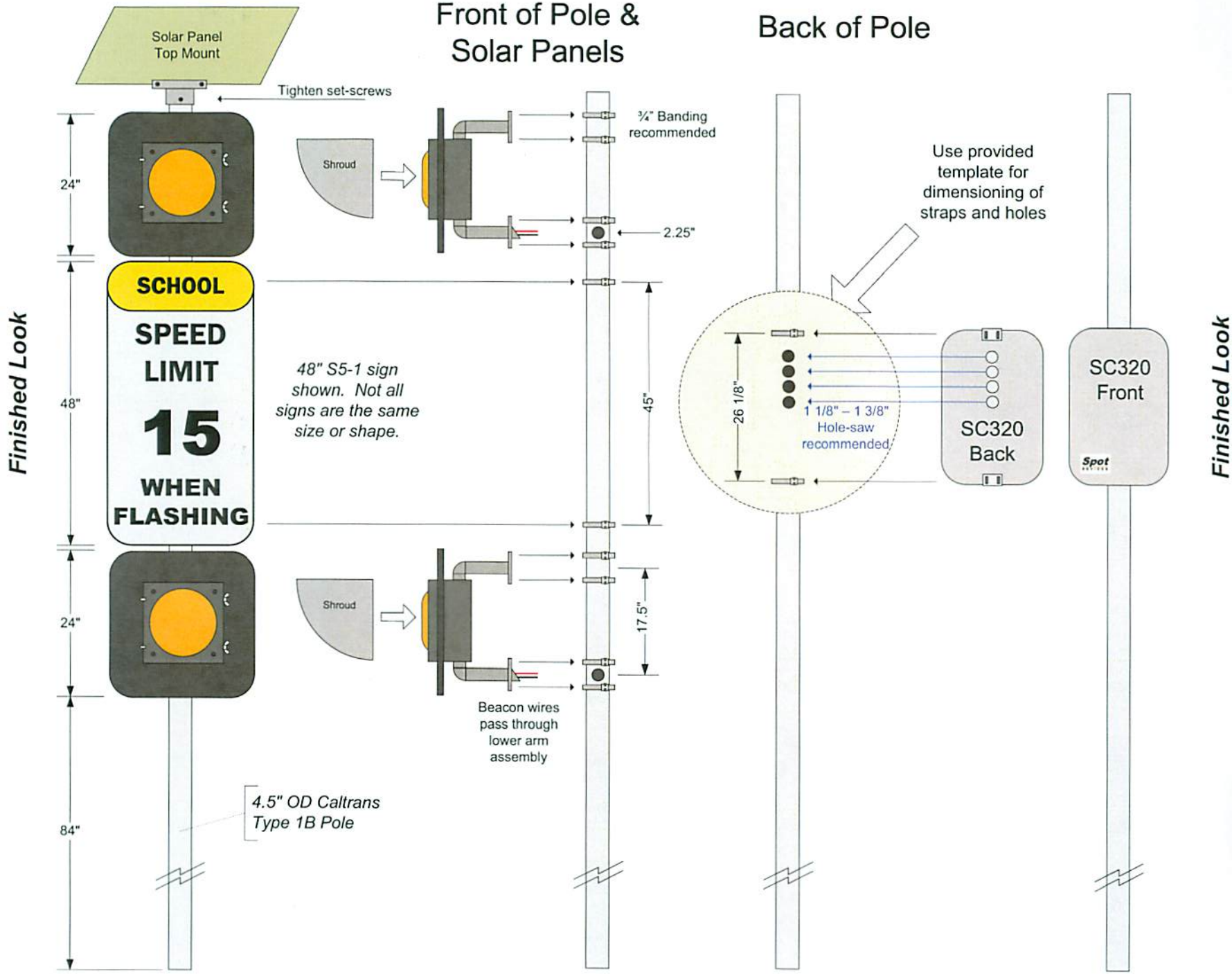
- Spot Devices and Pelco bases are patented products and considered proprietary. If proprietary systems are specified by a highway agency for use on Federal-aid projects, except exempt, non-NHS projects, (a) they must be supplied through competitive bidding with equally suitable unpatented items; (b) 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.
- This acceptance 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. The acceptance letter is limited to the crashworthiness characteristics of the candidate system, and FHWA is neither prepared nor required to become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

Sincerely yours,



David A. Nicol, P.E
Director, Office of Safety Design
Office of Safety

Enclosures


Front of Pole &
Solar Panels
Back of Pole
Solar Panel
Top Mount
Tighten set-screws
¾" Banding
recommended
Shroud
2.25"
24"
SCHOOL
SPEED
LIMIT
15
WHEN
FLASHING
48"
48" S5-1 sign
shown. Not all
signs are the same
size or shape.
45"
Shroud
24"
17.5"
Beacon wires
pass through
lower arm
assembly
84"
4.5" OD Caltrans
Type 1B Pole
Finished Look
Use provided
template for
dimensioning of
straps and holes
26 1/8"
1 1/8" – 1 3/8"
Hole-saw
recommended
SC320
Back
SC320
Front
Spot
Finished Look