

Refer to: HSA-10/WZ-164

Ms. Kathy Rogalla
MDI Traffic Control Products
38271 West Twelve Mile Road
Farmington Hills, Michigan 48311-3041

Dear Ms. Rogalla:

This is in response to your letter of August 11, 2003, your prior email messages, and subsequent correspondence requesting Federal Highway Administration (FHWA) acceptance of variations to your company's portable sign stands as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your correspondence were drawings and detailed descriptions of the stands and requested modifications. You requested that we find these devices acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

Introduction

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The first, dated July 25, 1997, titled "INFORMATION: Identifying Acceptable Highway Safety Features," established four categories of work zone devices: Category I devices are those lightweight devices which are to be self-certified by the vendor, Category II devices are other lightweight devices which need individual crash testing but with reduced instrumentation, Category III devices are barriers and other fixed or heavy devices also needing crash testing with normal instrumentation, and Category IV devices are trailer mounted lighted signs, arrow panels, etc. for which crash testing requirements have not yet been established. The second guidance memorandum was issued on August 28, 1998, and is titled "INFORMATION: Crash Tested Work Zone Traffic Control Devices." This later memorandum lists devices that are acceptable under Categories I, II, and III.

A brief description of the devices follows:

MDI Model 5018 with breakaway features using Plywood signs

The MDI Breakaway Model 4818 was crash tested and accepted with 0.080 aluminum signs via FHWA Acceptance Letter WZ-69 on May 9, 2001. Based on information supplied by the crash test researchers, use of the Breakaway Model 4818 with 16 mm

(5/8 inch) plywood was also considered acceptable. Your current request is for FHWA acceptance of 16 mm plywood signs Model 5018 sign with breakaway features. As the only difference between the 4818 and 5018 signs is the material the legs are fabricated from (Model 4818 stands have legs of 1.25 inch aluminum; Model 5018 stands have legs of 1.00 inch steel) we will consider this combination acceptable for use. Please note, however, that we consider any plywood sign mounted on an X-footprint stand at less than 5 feet to be in the “marginal” category.

MDI Model 4815-60 stand with roll-up, aluminum laminate, and Endurance signs.

The MDI Model 4815 stand, with sign mounted at 15 inches, was found acceptable in FHWA Acceptance Letter WZ-28. The configuration of the 4815-60 uses the same telescoping base as the 4815, but uses the crash-tested breakaway mast of the Model 4860 stand (supports a sign at 60 inches height and was accepted in WZ-69). The telescoping “footprint” of the proposed 4815-60 is smaller than the tested 4860 because the lightweight signs proposed for the 4815-60 are lighter than the plywood sign tested on the 4860 stand. The performance of the breakaway mast with the lightweight signs should be comparable to the version tested with the solid aluminum sign (4860).

Testing and Findings

Full-scale automobile testing was conducted on your company’s comparable sign stands, with acceptable results. Based on the analysis detailed above, the devices described above and detailed in the enclosed drawings are acceptable for use on the NHS under the range of conditions that the comparable signs were tested, when proposed by a State.

Please note the following standard provisions that apply to 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 FHWA and NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-164 shall not be reproduced except in full. This letter, and the test documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.

- MDI Sign Stands are patented products and considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are *selected by the contractor* for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if 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 FHWA to use, manufacture, or sell any patented device. Patent issues are to be resolved by the applicant and the patent owner.

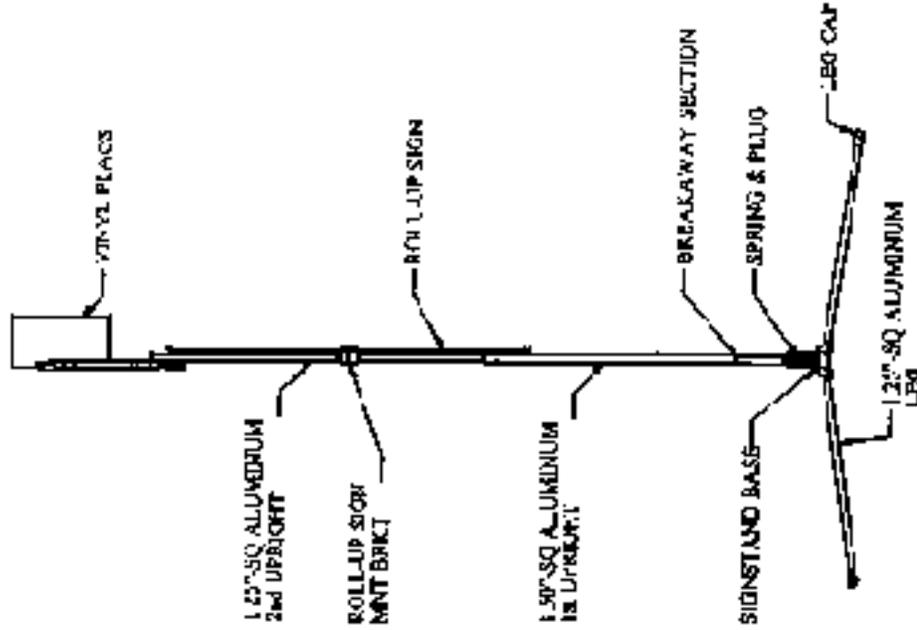
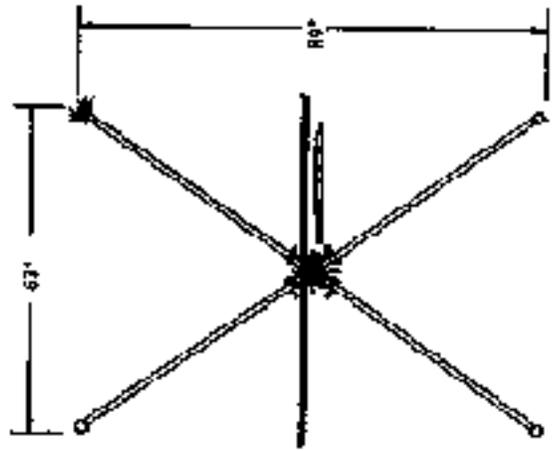
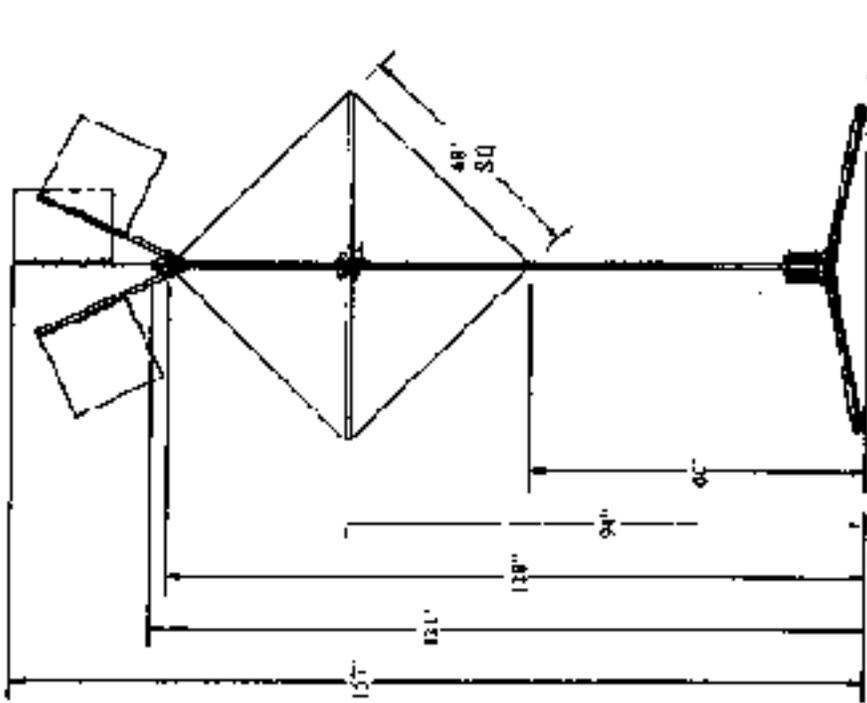
Sincerely yours,

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

Enclosures

FHWA:HSA-10:NArtimovich:tb:x61331:10/29/03
File: h://directory folder/nartimovich/WZ164-MDIfin
cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;
N. Artimovich, HSA-10)

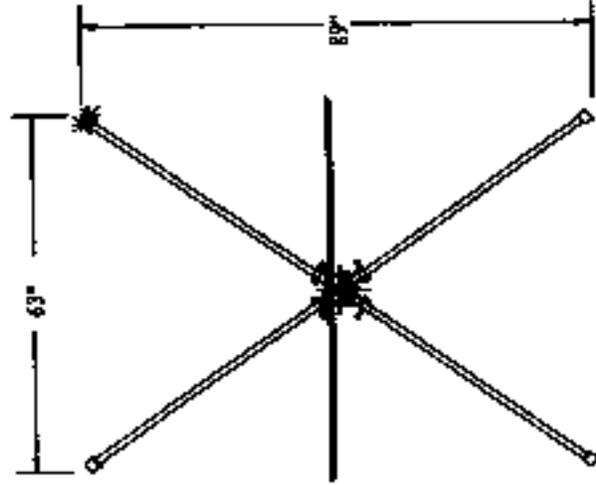
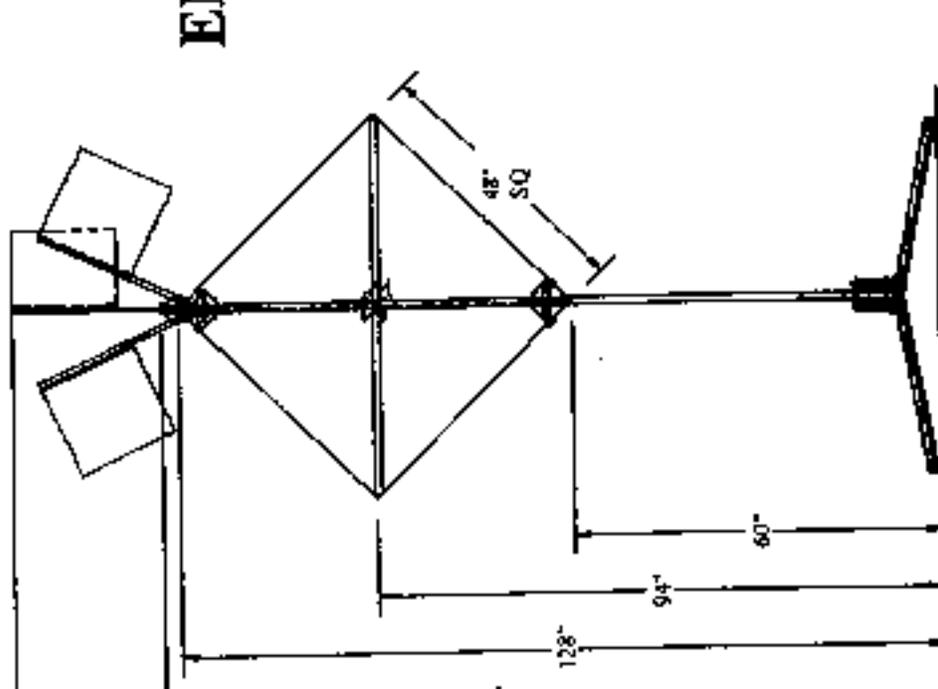
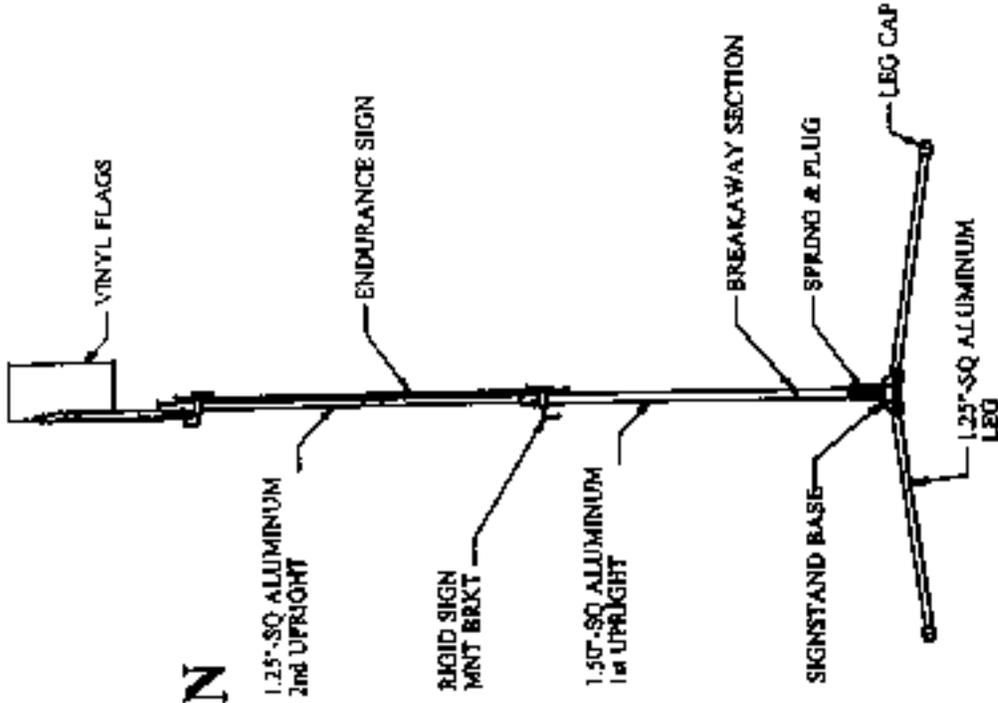
4815RBK-60 SCHEMATIC DRAWING ROLL-UP SIGN



4815RBK-60 WEIGHT	
ROLL-UP SIGN:	55 lbs
SIGN STAND WITH R.U. BRACKETS:	25.3 lbs
TOTAL:	31.8 lbs



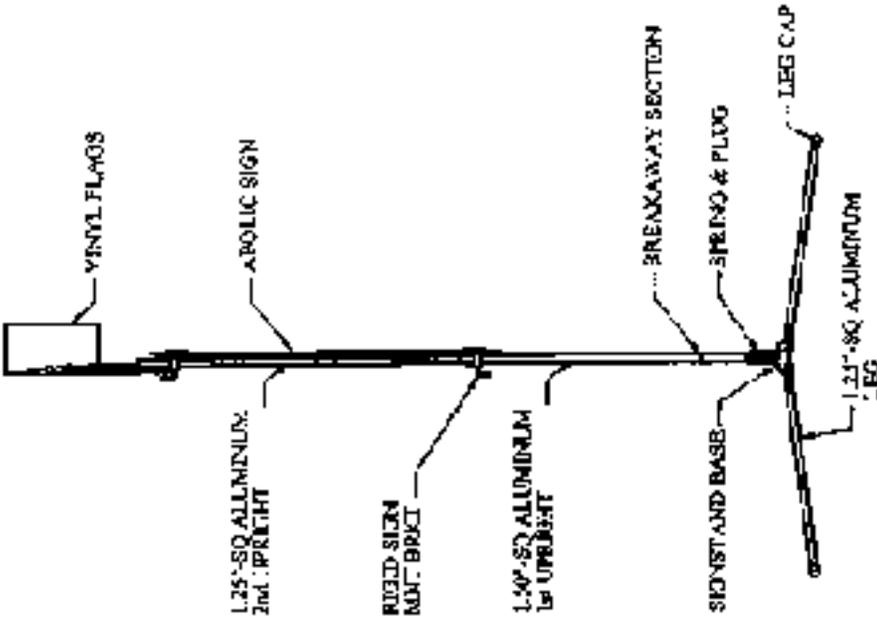
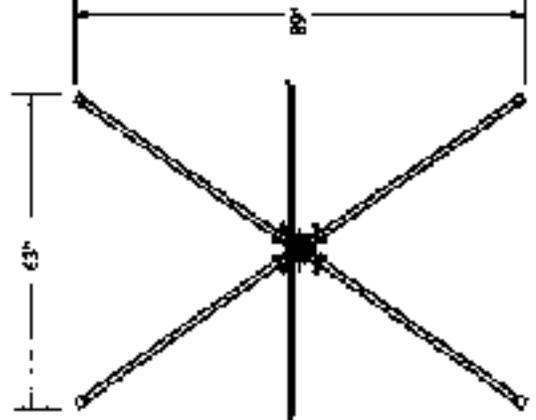
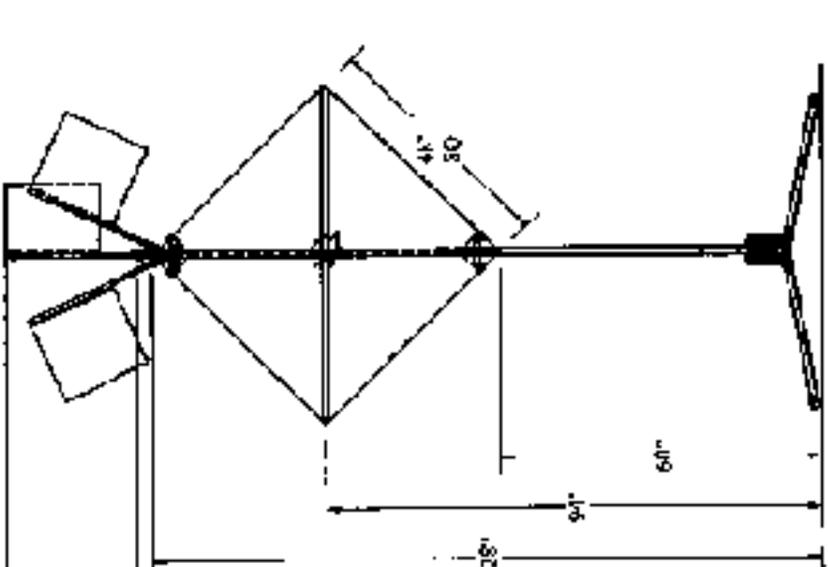
4815RBK-60 SCHEMATIC DRAWING ENDURANCE SIGN



4815RBK-60-UBRIGHT	
ENDURANCE SIGN:	10.5 lbs
SIGN STAND WITH RIGID BRACKETS:	28.7 lbs
TOTAL:	39.2 lbs



4815RBK-60 SCHEMATIC DRAWING APOLIC SIGN



4815RBK-60 WEIGHT	
APOLIC SIGN:	10.5 LB
SIGN STAND WITH RIGID BRACKETS:	28.1 LB
TOTAL:	38.6 LB



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forth in the plans and specifications for a project, unless:

- (1) Such patented or proprietary items are purchased or obtained through competitive bidding with equally suitable unpatented items; or
- (2) The State highway agency certifies either that such patented or proprietary item is essential for safety, maintenance with existing highway facilities, or that no equally suitable alternative exists; or
- (3) Such patented or proprietary item is used for research or for a distinctive short section of road for experimental purposes.

(b) When there is available for purchase more than one nonpatented, nonproprietary material, unfinished or finished article or product that will fulfill the requirements for an item of work of a project and these available materials or products are judged to be of satisfactory quality and equally acceptable on the basis of engineering analysis and the anticipated price for the related item(s) of work are estimated to be approximately the same, the FHWAs for the project shall either contain or include by reference the specifications for each such material or product that is considered acceptable for incorporation in the work. If the State highway agency wishes to substitute some other acceptable material or product for the material or product designated by the successful bidder or bid as the lowest alternative, and such substitution results in an increase in costs that will not be Federal-aid participation in any increase in costs.

(c) A State highway agency may require a specific material or product when there are other acceptable materials and products, when such specific choice is approved by the Division Administrator as being in the public interest. When the Division Administrator's approval is not obtained, the item will be nonparticipating unless bidding procedures are used that establish the unit price of such acceptable alternative. In this case Federal-aid participation will be based on the lowest price so established.

(d) Applicable to items with the FHWAs requirements regarding (1) the specification of alternative types of subject

A request must be submitted in advance of the waiver in order to allow for review and action on the FHWAs will have effect on the request.

Such waivers may be made in certain cases, or for certain projects, in specific projects or for combinations of projects under the circumstances. A request by the State Highway Administrator, whose action on the request is considered administrative.

For a waiver which includes public interest or more than one alternative may be submitted by the Administrator for review and an appeal.

For a request that includes the FHWAs waiver. The FHWAs waiver or appeal will be made available to the public. Any request for a waiver and FHWAs action or appeal may be published in the Federal Register for public comment. Paragraph (e) of this section, the FHWAs will be subject to cost administration. The FHWAs would be subject to cost administration if the provisions were not made and Federal-aid participation may be used to assist with the requirements.

As provided at 49 CFR 181.107, July 21, 1981; 49 CFR 181.107, July 21, 1981; 49 CFR 181.107, July 21, 1981.

For a waiver document 49 CFR 181.107, July 21, 1981.

For a product selection or product selection shall not participate in payment of costs of any other material, process specifically set

plans, and (2) the number and types of such alternatives which must be set forth in the specifications for various types of drainage installations.

(g) Reference in specifications and on plans to single trade name materials will not be approved on Federal-aid contracts.

181.107-10 Warranty clauses.

The FHWAs may include warranty provisions in National Highway System (NHS) construction contracts in accordance with the following:

(a) Warranty provisions shall be for a specific construction product or feature. Items of maintenance not eligible for Federal participation shall not be covered.

(b) All warranty requirements and subsequent decisions shall be submitted to the Division Administrator for advance approval.

(c) No warranty requirement shall be approved unless, in the judgment of the Division Administrator, it places an undue obligation on the contractor for items over which the contractor has no control.

(d) A FHWAs may follow its own procedures regarding the inclusion of warranty provisions in non-NHS Federal-aid contracts.

181.107-11, Aug. 2, 1980

Type of drainage facility	Alternative required	
	Yes	No
Crown drains under highway pavement	X	
Crown drains under bridge	X	
Side drains	X	
Special drainage systems (storm sewers, ditches, etc.)	X	

The items listed in this table are FHWAs. Alternatives to FHWAs are permitted by the FHWAs, provided that the FHWAs are approved by the Division Administrator. The FHWAs are approved by the Division Administrator. The FHWAs are approved by the Division Administrator.

181.107-12 Convict produced materials. (a) Materials produced after July 1, 1981, by convict labor may only be incorporated in a Federal-aid highway construction project if such materials have been:

(1) Produced by convicts who are on parole, supervised release, or probation from a prison or

(2) Produced in a qualified prison facility and the cumulative annual production amount of such materials for use in Federal-aid highway construction does not exceed the amount of such materials produced in such facility for use in Federal-aid highway construction during the 12-month period ending July 1, 1987.

(b) Qualified prison facility means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in Federal-aid highway construction projects.

49 CFR 181.107, July 21, 1981

APPENDIX A TO SURFACE D OF PART 181—SUMMARY OF ACCEPTABLE OPTIONS FOR SPECIFYING TYPES OF CULTIVAR TREES

ASHTO tree numbers to be listed with alternative	Applicable	Permits
14-19 and 14-20	Statewide	Any ASHTO tree (except 14-20)
14-21	Statewide	14-21
14-22	Statewide	14-22
14-23	Statewide	14-23
14-24	Statewide	14-24
14-25	Statewide	14-25
14-26	Statewide	14-26
14-27	Statewide	14-27
14-28	Statewide	14-28
14-29	Statewide	14-29
14-30	Statewide	14-30
14-31	Statewide	14-31
14-32	Statewide	14-32
14-33	Statewide	14-33
14-34	Statewide	14-34
14-35	Statewide	14-35
14-36	Statewide	14-36
14-37	Statewide	14-37
14-38	Statewide	14-38
14-39	Statewide	14-39
14-40	Statewide	14-40
14-41	Statewide	14-41
14-42	Statewide	14-42
14-43	Statewide	14-43
14-44	Statewide	14-44
14-45	Statewide	14-45
14-46	Statewide	14-46
14-47	Statewide	14-47
14-48	Statewide	14-48
14-49	Statewide	14-49
14-50	Statewide	14-50
14-51	Statewide	14-51
14-52	Statewide	14-52
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14-54	Statewide	14-54
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14-70	Statewide	14-70
14-71	Statewide	14-71
14-72	Statewide	14-72
14-73	Statewide	14-73
14-74	Statewide	14-74
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14-93	Statewide	14-93
14-94	Statewide	14-94
14-95	Statewide	14-95
14-96	Statewide	14-96
14-97	Statewide	14-97
14-98	Statewide	14-98
14-99	Statewide	14-99
14-100	Statewide	14-100

181.107-13 Purpose. To prescribe Interstate maintenance guidelines and establish the policy and procedures to insure that the condition of Interstate routes is maintained at

Subpart E—Interstate Maintenance Guidelines

181.107-14 Purpose.

To prescribe Interstate maintenance guidelines and establish the policy and procedures to insure that the condition of Interstate routes is maintained at

Source: 49 CFR 181.107, Mar. 31, 1980. unless otherwise noted.