

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MOBILE ATTENUATOR

COS:CRB

1 of 4

APPR:CT:LLR:08-04-22
FHWA:APPR:08-15-22

a. Description. This special provision sets the guidelines for when mobile attenuators are to be used to protect workers or work equipment from vehicular traffic. Throughout this special provision, mobile attenuators refer to truck mounted attenuators (TMA) and trailer mounted attenuators.

Use mobile attenuators in projects to protect personnel or equipment when one or more of the following conditions are met.

- The vehicle is designated as a protective vehicle (shadow vehicle or barrier vehicle) as part of the Maintaining Traffic Typicals, maintenance of traffic plans, or other contract documents.
- Aerial work is being performed on scaffolding, lifts, hoists, bucket trucks, etc., where workers using this equipment are in an occupied lane or shoulder and not protected by temporary barrier. Mobile attenuators are not intended to be used for the removal, installation, or maintenance of traffic signals.
- Mobile/short duration operations such as pavement marking convoys, grinding in rumble strips, permanent sign installations, temporary ground mounted sign installations, sign installations located in areas where a work-vehicle cannot pull entirely outside of the edge line, luminescent installations, etc. Mobile attenuators are not intended to be used for the removal or installation of special markings.

Do not mount mobile attenuators on the vehicle or equipment used by personnel to complete aerial work. Do not use mobile attenuators as a temporary/permanent barrier ending except during replacement of damaged temporary/permanent barrier endings. In the event that a mobile attenuator is used as a temporary safety measure for a damaged temporary/permanent barrier ending, the maximum length of time that it can be used for this purpose is 48 hours or as approved by the Engineer.

1. Stationary and Mobile Operation. This work consists of furnishing a vehicle with a gross vehicle weight meeting manufacturer's specifications, or meeting the minimum weight requirements shown in Tables 1 and 2, whichever is greater. Furnish, install, and operate a mobile attenuator in accordance with the manufacturer's recommendations, the contract, and/or as directed by the Engineer. Locate the attenuator placement as detailed in the applicable Maintaining Traffic Typical, maintenance of traffic plans or elsewhere in the contract.

Securely attach material loaded onto the vehicle to obtain the required gross weight, for transport or during work operations to the vehicle. Hazardous materials will not be allowed

on this vehicle. Materials that will be off loaded and incorporated into the construction activities will not be considered part of the vehicle gross weight.

b. Materials and Design. Use mobile attenuators that meet or exceed the requirements of *NCHRP 350 Test Level 2 (TL-2)* or *Test Level 3 (TL-3)*, or *MASH TL-2* or *TL-3*, as described below for work zone traffic control devices.

1. Utilize a mobile attenuator rated for *NCHRP 350, TL-2* or *MASH, TL-2* on non-freeway roadways with a normal posted speed of 40 mph or less. TL-2 mobile attenuators are prohibited for use on all freeways, regardless of the posted speed limit, and non-freeway roadways and work zones with posted speed limits of 45 mph or greater.

2. Utilize a mobile attenuator rated for *NCHRP 350, TL-3* or *MASH, TL-3* on all freeways, regardless of the posted speed limit, and non-freeway roadways and work zones with posted speed limits of 45 mph or greater. TL-3 mobile attenuators may be used on all roadways and work zones regardless of the posted speed limit.

Furnish the Engineer a copy of the FHWA letter of eligibility for federal aid stating the mobile attenuator meets the appropriate *NCHRP 350* or *MASH* test level specified in the above stated criteria. In addition, furnish a letter to the Engineer stating the mobile attenuator system has been installed and maintained in accordance with the manufacturer's specifications.

The face of the mobile attenuator, visible to approaching traffic must have reflectorized alternating yellow and black stripes, sloping downwards in both directions from the center of the attenuator.

c. Operating Details and Utilization. Operate the mobile attenuator per manufacturer's recommendations, the contract, and/or as directed by the Engineer. This includes, but is not limited to, the following:

- Unless otherwise specified by the mobile attenuator manufacturer, ensure the height from the bottom of the mobile attenuator to the roadway surface is 12 inches (± 2.5 inches). When specified otherwise by the manufacturer, furnish documentation to the Engineer indicating the manufacturer's bottom height recommendations and tolerances.
- Ensure the mobile attenuator is parallel (level) with the roadway surface.
- Furnish a shoulder harness and headrest for the mobile attenuator vehicle's operator.

For stationary operations, when operating the vehicle with the attenuator installed, ensure the vehicle is in second gear if it has a standard transmission (park if an automatic transmission), with the parking brakes set and steering wheels turned away from the work area and traffic, if possible.

Place the mobile attenuator in accordance with the manufacturer's recommended roll-ahead distance, or the minimum roll-ahead distance shown in Tables 1 and 2, whichever is greater.

If the mobile attenuator is involved in a crash, provide pictures of the crash scene and the damage of the mobile attenuator to the Engineer within 7 days of the incident.

d. Measurement and Payment. Mobile attenuators will be furnished and operated at no cost to the Department for all contract items associated with pavement marking operations.

The cost for the equipment, mobilization, and labor to furnish and operate this equipment will be included in other contract pay items. The Department will pay for repair or replacement of a mobile attenuator called for as part of the pavement marking operations if damaged by something other than the Contractor's own equipment, during contract operations as described below. Measurement and payment for the use of mobile attenuators on all other contract items will be as described below.

Pay Item**Pay Unit**

Mobile AttenuatorEach

The Department will pay for the maximum number of mobile attenuators deployed per the Maintaining Traffic Typical, maintenance of traffic plans or elsewhere in the contract and in use at any one time during the life of the project or as approved by the Engineer. If the Contractor uses alternative construction operations or methods that require additional mobile attenuators that exceed the amount specified in the contract, the additional mobile attenuators must be provided at the Contractor's expense.

The Department will pay for repair or replacement of a mobile attenuator called for as part of the contract if damaged by something other than the Contractor's own equipment, during contract operations by contract modification with the name of the extra pay item to be defined as Mobile Attenuator, Repair or Mobile Attenuator, Replace if the following criteria are met:

1. The damaged or destroyed attenuator must meet all of the manufacturing and operating criteria of this special provision.
2. The Contractor must have attenuators repaired or replaced in accordance with the Manufacturer/Supplier recommendations to ensure that the units are in good working order. Documentation of repair is to be furnished to the Engineer via signed certification from the Contractor stating that the repairs have been done in accordance with the Manufacturer's recommendations prior to implementing the mobile attenuators for use.
3. Furnish a crash report from the enforcement agency involved in the crash investigation.
4. Furnish pictures of the crash scene and damages to the mobile attenuator.
5. Ensure the attenuator repair or replacement is for the actual unit as required by this special provision. The cost to perform the repairs or replace the attenuator including installation will be paid for by the Contractor. Furnish to the Engineer a detailed invoice from the Supplier showing material costs for replacement or repair for payment. The Department will not pay for repair or replacement cost beyond the Suppliers' invoice cost for a new attenuator.
6. The Department will not pay for any costs that are required to replace or repair the attenuator vehicle and any other items which were used to operate the attenuator.
7. Attenuators that have been repaired or replaced as part of the contract are not eligible for additional payment using the Mobile Attenuator pay item once the attenuator is placed back into service.

Table 1. Guidelines For Roll-Ahead Distance For Mobile Attenuator Vehicles Test Level 2

Weight of Mobile Attenuator Vehicle (b)	Posted Speed (mph) (Posted Speed Prior to Work Zone)	Roll Ahead Distance (a), (c) (Distance from front of Mobile Attenuator Vehicle to Work Area)
5.5 Tons (Stationary Operation)	40 or Less	25 feet
a. Roll ahead distances are calculated using a 4,410 pound impact vehicle weight. b. Minimum vehicle weight specified. Use manufacturer's recommended mobile attenuator vehicle weight when the manufacturer's recommendation exceeds the minimum weight specified in this table. c. Minimum roll-ahead distance specified. Use manufacturer's recommended roll-ahead distance when the manufacturer's recommendation exceeds the minimum roll-ahead distance specified in this table.		

Table 2. Guidelines For Roll-Ahead Distance For Mobile Attenuator Vehicles Test Level 3

Weight of Mobile Attenuator Vehicle (b)	Posted Speed (mph) (Posted Speed Prior to Work Zone)	Roll-Ahead Distance (a), (c) (Distance from front of Mobile Attenuator Vehicle to Work Area)
5 Tons (Mobile Operation)	60-70	175 feet
	50-55	150 feet
	45	100 feet
12 Tons (Stationary Operation)	60-70	50 feet
	50-55	25 feet
	45	25 feet
a. Roll ahead distances are calculated using a 10,000 pound impact vehicle weight. b. Minimum vehicle weight specified. Use manufacturer's recommended mobile attenuator vehicle weight when the manufacturer's recommendation exceeds the minimum weight specified in this table. c. Minimum roll-ahead distance specified. Use manufacturer's recommended roll-ahead distance when the manufacturer's recommendation exceeds the minimum roll-ahead distance specified in this table.		