

Replace section 12-3.23 of the RSS for section 12 with:

12-3.23 IMPACT ATTENUATOR VEHICLES

12-3.23A General

12-3.23A(1) Summary

Section 12-3.23 includes specifications for using impact attenuator vehicles.

12-3.23A(2) Definitions

impact attenuator vehicle: Deployed impact attenuator mounted to a truck or deployed impact attenuator mounted to a trailer and towed by a truck.

12-3.23A(3) Submittals

Submit a certificate of compliance for each impact attenuator.

12-3.23A(4) Quality Assurance

Reserved

12-3.23B Materials

12-3.23B(1) General

Each impact attenuator vehicle includes:

1. Truck
2. Impact attenuator
3. Type II flashing arrow sign or PCMS
4. Flashing or rotating amber light
5. Two-way communication system

12-3.23B(2) Impact Attenuators

Each impact attenuator must:

1. Be on the Authorized Material List for highway safety features.
2. Comply with MASH test level 3 or NCHRP 350 test level 3 up to December 31, 2026, where the posted speed limit is 50 mph or more.
3. Comply with MASH test level 2 or 3 or NCHRP 350 test level 2 or 3 up to December 31, 2026, where the posted speed limit is 45 mph or less.
4. Be individually identified with the manufacturer's name, address, attenuator model number, and serial number. The name and number must be a minimum 1/2-inch high, located on the street side on the lower left front corner.
5. Have an inverted V-chevron pattern placed across the entire rear of the attenuator and composed of alternating 4-inch-wide, nonreflective black stripes and 4-inch-wide, yellow retroreflective stripes sloping at 45 degrees.

12-3.23B(3) Trucks

Each truck must comply with:

1. Veh Code Div 12
2. Vehicle weight limits as shown in the Authorized Materials List for highway safety features and the impact attenuator manufacturer's instructions except the vehicle weight must be greater than 22,000 pounds when used with a stationary impact attenuator vehicle
3. Impact attenuator manufacturer's mounting requirements

A PCMS used as a flashing arrow sign must comply with the specifications for an arrow board in the *California MUTCD*.

12-3.23C Construction

12-3.23C(1) General

Secure objects, including equipment, tools, and ballast, on impact attenuator vehicles to prevent their loosening upon impact by an errant vehicle.

Do not use a damaged attenuator. Replace any damaged attenuator.

Do not place an impact attenuator vehicle within the buffer space.

Position the front of the impact attenuator vehicle at a distance upstream from the moving work vehicle as shown in the following table:

Posted speed limit (mph)	Distance (feet)
<45	100
45–55	150
>55	175

Monitor the placement and use of the impact attenuator vehicle on a regular basis and adjust the position to match changing field conditions as construction progresses.

12-3.23C(2) Stationary Impact Attenuator Vehicles

Section 12-3.23C(2) applies if a bid item for stationary impact attenuator vehicles is shown on the Bid Item List.

Use a stationary impact attenuator vehicle to protect workers on foot within the work area when the posted speed limit is 55 mph or greater and workers are not protected by a longitudinal barrier system.

Place the stationary impact attenuator vehicle between the longitudinal buffer space and the work area without intruding into the buffer space. Position the front of the stationary impact attenuator vehicle at a distance upstream of the work area as shown in the following table:

Posted speed limit (mph)	Distance (feet)
<45	75
45–55	100
>55	150

Place the transmission in park and set the parking brake or follow the impact attenuator manufacturer's instructions.

12-3.23D Payment

Stationary impact attenuator vehicle will be measured by 1-day of operation counting as 1 measure unit. A day is defined as 24 consecutive hours beginning at the start of the work shift and includes relocation of the stationary impact attenuator.

Replace section 12-3.24 of the RSS for section 12 with:

12-3.24 MOBILE BARRIER SYSTEMS

12-3.24A General

12-3.24A(1) Summary

Section 12-3.24 includes specifications for providing, placing, maintaining, and removing mobile barrier system.

Mobile barrier system provides enhanced protection of workers and traveling public in designated work zones.

12-3.24A(2) Definitions

Not Used

12-3.24A(3) Submittals

At least 5 business days before starting any work using the mobile barrier system, submit as informational submittals:

1. FHWA's acceptance letter for mobile barrier system compliance with MASH Test Level 3 requirements
2. Manufacturer's instructions
3. Certificate of compliance with Test Level 3 requirements for impact attenuator

12-3.24A(4) Quality Assurance

Not Used

12-3.24B Materials

A mobile barrier system includes:

1. Barrier trailer
2. Semi-tractor
3. Impact attenuator
4. Portable changeable message sign
5. 120/240 V, 10kW Generator
6. Work area lights

The mobile barrier system must:

1. Be a rigid wall barrier trailer that can be used with a standard semi-tractor
2. Comply with Veh Code Div 12
3. Be colored safety yellow or orange
4. Comply with MASH Test Level 3 requirements, except impact attenuator
5. Provide a protected adjustable work area of up to 100 feet, excluding the impact attenuator and semi-tractor
6. Be configurable to protect a work area to the right or left side of the road
7. Have LED clearance and side-marker lights mounted on the barrier trailer
8. Have flashing or rotating amber lights

Impact attenuator must comply with MASH Test Level 3 or NCHRP 350 Test Level 3 impact attenuator up to December 31, 2026.

Work area lights must illuminate the entire work area at 10 foot-candles under 8 CCR 1523. The lights must not produce any glare to oncoming traffic.

Mobile Barrier trailer must be as manufactured by Mobile Barriers LLC or equal.

Mobile barrier trailer can be rented from:

Website	Address	Telephone no.
http://www.mobilebarriers.com	MOBILE BARRIERS LLC 24918 GENESEE TRAIL ROAD GOLDEN, COLORADO 80401	OFFICE (303) 526-5995 FAX (303) 526-9959

The price quoted by Mobile Barrier LLC for the mobile barrier system, F.O.B. _____, _____ telephone _____ for rental is \$ _____ per month, not including sales tax.

The above price will be firm for orders placed on or before _____, provided delivery is accepted within 90 days after the order is placed.

12-3.24C Construction

Do not use mobile barrier to guide traffic across lanes or shoulders.

Placement, movement, and removal of a mobile barrier system must be within a stationary lane closure.

Provide a mobile barrier system for the lane closure chart number at the locations shown for the construction activity:

Lane closure chart no.	Location	Construction activity
G1	Station 100+20	Lane #4 slab replacement

Place the mobile barrier system parallel to the lanes as shown, within the closure at the beginning of the work area and reposition the mobile barrier as work progresses.

The mobile barrier may be placed within the traffic control system in the lane adjacent to the work area.

The side of the mobile barrier adjacent to traffic must not encroach into the adjacent lane.

Channelizing devices shown adjacent to the mobile barrier may be removed. Place the channelizing devices back as the mobile barrier moves within the work zone.

When a mobile barrier system is not in use, remove it from the job site, place it behind a barrier or guardrail, or move it to an area at least 15 feet from the edge of the traveled way.

12-3.24D Payment

Each mobile barrier system is paid for each working day of use in a closure with each working day counting as 1 measurement unit.

Replace section 12-3.25 of the RSS for section 12 with:

12-3.25 MOVABLE BARRIER SYSTEMS

12-3.25A General

12-3.25A(1) Summary

Section 12-3.25 includes specifications for providing, placing, moving from location to location, maintaining and removing the movable barrier system.

12-3.25A(2) Definitions

Not Used

12-3.25A(3) Submittals

At least 5 business days before starting any work using the movable barrier system, submit as informational submittals:

1. Certificate of Compliance
2. Manufacturer's instructions for movable barrier system
3. Manufacturer's plan and parts list for the furnished model
4. Training certificate for the operators of the transfer and transport machine

12-3.25A(4) Quality Assurance

Not Used

12-3.25B Materials

A movable barrier system includes:

1. Precast barrier sections
2. Transfer and transport machine
3. Temporary crash cushions
4. Reflectors
5. Type P marker panels

The movable barrier system must comply with MASH Test Level 3 requirements, except for the temporary crash cushions.

The movable barrier system must be as manufactured by Lindsay Corporation, or equal.

The Concrete Reactive Tension System-Quickchange Movable Barrier system can be leased from the manufacturer shown in the following table:

System	Website	Address	Telephone no.
Concrete Reactive Tension System-Quickchange Movable Barrier	https://www.lindsay.com/usca/en/infrastructure	LINDSAY CORPORATION 18135 BURKE ST SUITE 100 ELKHORN NE 68022	(800) 829-5300

The price quoted by the manufacturer for the movable barrier system, including the temporary crash cushion, F.O.B. _____ telephone (____) ____ - ____ is \$_____, not including sales tax.

The above price will be firm for orders placed on or before _____, provided delivery is accepted within 90 days after the order is placed.

Precast barrier section must:

1. Be 32 inches high
2. Be 24 inches wide at the base
3. Be reinforced with materials conforming to:
 - 3.1. Reinforcing bars Grade 40 or 60
 - 3.2. Steel hinges ASTM A36
 - 3.3. Through rods ASTM A36
 - 3.4. Hinge pins AISI 4140 or 4142

The transfer and transport machine must:

1. Comply with Veh Code Div 12
2. Transfer laterally continuous lengths of movable barrier from 4 to 18 feet in one-inch increments at speeds up to 5 mph while lifting the barrier to accommodate differences in roadway elevation up to 12 inches
3. Move the movable barrier sections 12 feet in either direction from a neutral 1800-foot-radius curve without disassembly
4. Move at a maximum speed of 5 mph down the roadway when transferring and transporting the movable barrier sections
5. Maintain the movable barrier in a neutral longitudinal position when transferred on up and down grades and curves
6. Transfer the movable barrier section laterally up to 12 feet without causing any part of the equipment or barrier to extend into traffic
7. Be equipped with a tow fitting at each end for towing in the event of a transfer and transport machine malfunction or failure
8. Transfer and transport machine must support the lateral transfer of movable barrier sections while towed

The temporary crash cushion must:

1. Be on the Authorized Material List for highway safety features
2. Be ABSORB 350 and comply with NCHRP 350 Test Level 3 requirements
3. Comply with section 83
4. Be approved by the movable barrier system manufacturer

Type P marker panels must comply with section 82-3.

12-3.25C Construction

Initially place movable barrier system as shown and laterally shift the barrier from location to location using the transfer and transport machine as shown.

If the Engineer orders a move of the movable barrier system and the repositioning is not shown, moving the movable barrier system will be paid for as change order work.

Place movable barrier system under the manufacturer's recommendations.

Install a reflector on the top or face of every fifth precast barrier section placed within 10 feet of a traffic lane. Apply adhesive for mounting the reflector under the reflector manufacturer's instructions.

Install a P marker panel at each end of a barrier installed adjacent to a two-lane, two-way highway and at the end facing traffic of a barrier installed adjacent to a one-way roadbed. If the barrier is placed on a skew, the marker must be installed at the end of the skew nearest the traveled way.

When a movable barrier system is not in use, remove it from the job site or place it behind a barrier or guardrail.

12-3.25D Payment

Not Used

Replace section 12-3.26 of the RSS for section 12 with:

12-3.26 TEMPORARY ALTERNATIVE BARRIER SYSTEM

12-3.26A General

12-3.26A(1) Summary

Section 12-3.26 includes specifications for installing, maintaining, repairing, replacing, moving, and removing temporary alternative barrier system, including marker panels and reflectors, as shown under the manufacturer's installation instructions and these special provisions.

12-3.26A(2) Submittals

Submit a certificate of compliance and two copies of the manufacturer's drawings, installation instructions, and maintenance manual for the temporary alternative barrier system a minimum of 10 days prior to installation.

12-3.26B Materials

The temporary alternative barrier system must be one of the following:

1. Temporary Railing (TYPE K) per section 12-3.20.
2. Temporary Zoneguard Barrier Minimum Deflection System manufactured by Hill and Smith Inc., must include items detailed for the MASH compliant Test Level 3 system, including one SLED crash cushion system, as shown on the manufacturer's plans and installation instructions. The system can be obtained from the distributor, D and M Traffic Services, 845 Reed Street, Santa Clara, CA 95050, telephone: (408) 436-1127. .

12-3.26C Construction

The temporary alternative barrier system must be installed in conformance with section 12 or the manufacturer's installation instructions.

Maintain temporary alternative barrier system in place at each location, including times when work is not actively in progress. Remove temporary alternative barrier system when no longer required.

Immediately repair temporary alternative barrier system when damaged. Remove and replace barrier system if damaged beyond repair.

Anchor system by pinning if shown. For the Zoneguard barrier system, pin for minimum deflection and in conformance with the manufacturer's instruction and installation manual.

Anchor system by pinning if shown. For the Zoneguard barrier system, pin for standard deflection and in conformance with the manufacturer's instruction and installation manual.

Install a reflector on the top or face of each Zoneguard section placed within 10 feet of a traffic lane. Reflectors must be on the Authorized Material List for signing and delineation materials. The adhesive for mounting the reflector must comply with the reflector manufacturer's instruction.

Attach a Type R or Type P marker panel to the front of the SLED crash cushion if the closest point of the SLED crash cushion is within 12 feet of the traveled way. Firmly fasten the marker panel to the crash cushion with commercial quality hardware or by other authorized methods.

The temporary Zoneguard Minimum Barrier Deflection System must be installed on a Portland Cement Concrete (PCC) or asphalt concrete smooth firm surface according to the manufacturer's installation

instructions. Refer to the system installation and maintenance manual for pinning and moving requirements.

After temporary alternative barrier system is removed, restore the area to its previous condition.

12-3.26D Payment

Repair or replacement of the temporary Zoneguard Minimum Deflection Barrier System damaged by traffic is change order work.

Replace section 12-3.27 with:

12-3.27 ALTERNATIVE TEMPORARY CRASH CUSHION

12-3.27(1) General

12-3.27(1)(a) Summary

Section 12-3.24 includes specifications for constructing alternative temporary crash cushion.

12-3.27(1)(b) Definitions

Not Used

12-3.27(1)(c) Submittals

Submit a certificate of compliance for alternative temporary crash cushion.

12-3.27(1)(d) Quality Assurance

At least 10 days before installation, submit a certificate of compliance and a minimum of two copies of the manufacturer's drawings, installation instruction manual, and maintenance manual for each model of alternative temporary crash cushion to be used. You must have a copy of the manufacturer's drawings, installation instructions manual, and maintenance manual for each alternative temporary crash cushion to be used on the job site during installation.

Use personnel trained by the manufacturer to install alternative temporary crash cushion. A record of training provided by the manufacturer may be requested by the Engineer at any time.

12-3.27(2) Materials

The alternative temporary crash cushion must be one of the following or a Department-authorized equal:

1. Type ACZ-350 - alternative temporary crash cushion must be ACZ-350 Alternative Temporary Crash Cushion manufactured by Energy Absorption Inc. and must include the connection components. Type ACZ-350 alternative temporary crash cushion - Type ACZ-350 alternative temporary crash cushion must be test level 3, manufactured by Energy Absorption Inc. The ACZ-350 Alternative Temporary Crash Cushion can be obtained from the manufacturer:

Address	Telephone no.
NATIONAL TRENCH SAFETY SAN FRANCISCO BAY AREA 45945 WARM SPRINGS BLVD FREMONT, CA 94539	(510) 490-2140

2. Type ABSORB – 350(TL-3) - Type ABSORB-350 alternative temporary crash cushion must be Crash Cushion test level 3 manufactured by Barrier Systems, Inc. Use the 9 element system to connect to temporary railing (Type K) and must include items detailed for Type ABSORB – 350 crash cushion shown on the plans. The ABSORB- 350 alternative temporary crash cushion can be obtained from the distributor:

Address	Telephone no.
STATEWIDE TRAFFIC SAFETY & SIGNS, INC 522 LINDON LANE NIPOMO, CA 93444	(802) 929-3723

3. Type SLED-SENTRY LONGITUDINAL ENERGY DISSIPATOR END TREATMENT A three module gating, non-redirective alternative temporary crash cushion must be SLED Alternative Temporary Crash Cushion manufactured by Traffix Devices, Inc., and must include the connection components. Type SLED alternative temporary crash cushion - Type SLED alternative temporary crash cushion must be test level 3, manufactured by Traffix Devices, Inc.,. The SLED alternative temporary crash cushion can be obtained from the manufacturer:

Address	Telephone no.
TRAFFIX DEVICES, INC 160 AVENIDA LA PATA SAN CLEMENTE, CA 92673	(949) 361-5663

4. Type ADIEM-350 -Type ADIEM-350 alternative temporary crash cushion must be Crash Cushion test level 3 manufactured by Trinity Industries, Inc, must include the items shown on the manufacturer plans and installation instructions. The ADIEM-350 alternative temporary crash cushion can be obtained from the manufacturer:

Address	Telephone no.
CALIFORNIA DISTRIBUTOR CNW CONSTRUCTION 2419 PALMA DRIVE VENTURA CA 93003	(805) 642-0204

12-3.27(3) Construction

Install alternative temporary crash cushion under the manufacturer's instructions.

Attach a Type R or Type P marker panel to the front of the alternative temporary crash cushion if the closest point of the crash cushion array is within 12 feet of the traveled way. Firmly fasten the marker panel to the crash cushion with commercial-quality hardware or by other authorized methods.

Maintain alternative temporary crash cushion in place at each location, including times when work is not actively in progress.

Repair damaged alternative temporary crash cushion immediately. Remove and replace crash cushions damaged beyond repair. Replacement and repair of crash cushions damaged by public traffic is change order work.

12-3.27(4) Payment

Not Used

Replace section 12-4.02C(7)(b) of the RSS for section 12 with:

12-4.02C(7)(b) Stationary Closures

Except for channelizing devices placed along open trenches or excavations adjacent to the traveled way, remove the components of the traffic control system for a stationary closure from the traveled way and shoulders at the end of each work period. You may store the components at authorized locations within the limits of the highway.

If a traffic lane is closed with channelizing devices for excavation work, move the devices to the adjacent edge of the traveled way when not excavating. Space the devices as shown for the lane closure.

Use an impact attenuator vehicle to place and remove components of a stationary traffic control system. Do not use an impact attenuator vehicle on two-lane conventional highways if the vehicle would have to stop within a lane open to traffic to place, maintain, or remove the traffic control system.

Provide a stationary impact attenuator vehicle for:

1. Pavement marking
2. Loop detectors installation
3. Concrete slab saw-cutting and replacement
4. Crack sealing

For a traffic control system with multiple work areas, place a stationary impact attenuator at each work area with a separation distance of at least 500 feet from the adjacent work area.