

Changes are shaded.

CRASH CUSHIONS

(NCHRP 350 Approved)

August 23, 2011

Note that an insertable sheet will be required for each proposed location. For details please contact the Standards Section (Central Office L&D).

TYPE I (RE-DIRECTIVE)

SCI PRODUCTS, INC.	TL-2 SCI-70GM TL-3 SCI-100GM	Low Maintenance Crash Cushion Low Maintenance Crash Cushion
ENERGY ABSORPTION SYSTEMS, INC.	TL-2 QUADGUARD ELITE (7 BAY) TL-3 QUADGUARD ELITE (11 BAY) TL-2 & TL-3 QUADGUARD TL-3 QUADGUARD-WIDE TL-2 & TL-3 QUADGUARD II TL-3 QUADGUARD-WIDE II TL-3 QUADGUARD LMC TL-3 REACT 350	Low Maintenance Crash Cushion Low Maintenance Crash Cushion Reusable Crash Cushion (CZ or Permanent) Reusable Crash Cushion (Permanent) Reusable Crash Cushion (CZ or Permanent) Reusable Crash Cushion (Permanent) Low Maintenance Crash Cushion (Permanent) Low Maintenance Crash Cushion (CZ or Permanent)
TRINITY INDUSTRIES	TL-3 ADIEM TL-2 & TL-3 TRACC TL-3 FISTRACC TI-3 WIDETRACC TL-2 SHORTRACC	Sacrificial Lightweight Concrete Crash Cushion (For use in CZ only) Reusable Crash Cushion (CZ or Permanent) Reusable Crash Cushion (CZ or Permanent) Reusable Crash Cushion (CZ or Permanent) Reusable Crash Cushion (CZ or Permanent)
BARRIER SYSTEMS, INC.	TL-2 TAU-II (4 bay) TL-3 TAU-II (8 bay)	Reusable Crash Cushion (CZ or Permanent) Reusable Crash Cushion (CZ or Permanent)

TL-1, 30 MPH Max.

TL-2, 45 MPH Max.

TL-3, >45 MPH

Note: CZ refers to Construction Zone

Type I = Re-Directive Crash Cushion

Type IA = Re-Directive Crash Cushion (\leq 45 MPH)

Type II = Non Re-Directive Crash Cushion

CRASH CUSHIONS **(NCHRP 350 Approved)**

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TYPE II (NON RE-DIRECTIVE)*

*** NOT FOR USE IN LOCATIONS WHERE HIGH-SPEED, HIGH ANGLE IMPACTS ARE LIKELY. REQUIRES 20' WIDE x 75' LONG CLEAR AREA BEHIND HAZARD.**

ENERGY ABSORPTION SYSTEMS, INC.	TL-1 & TL-2 NEAT Non-Re-directive, Guards Pre-cast Traffic Barrier Service Concrete and QMB (CZ only) TL-1, TL-2 & TL-3 FITCH UNIVERSAL MODULE Sand Module (CZ or Permanent)
PLASTIC SAFETY SYSTEMS, INC.	TL-3 CRASHGARD SYSTEM Sand Module (CZ or permanent)
TRAFFIX DEVICES, INC.	TL-1, TL-2 & TL-3 BIG SANDY Sand Module (CZ or Permanent)
BARRIER SYSTEMS, INC.	TL-2 & TL-3 ABSORB 350 Non-Re-directive Crash Cushion (CZ)

TL-1, 30 MPH Max.

TL-2, 45 MPH Max.

TL-3, >45 MPH

Note: CZ refers to Construction Zone

Type I = Re-Directive Crash Cushion

Type IA = Re-Directive Crash Cushion (\leq 45 MPH)

Type II = Non Re-Directive Crash Cushion

TERMINALS
(NCHRP 350 Approved)

ROAD SYSTEMS, INC.	TL-3 FLARED ENERGY ABSORBING TERMINAL (FLEAT-350) 37'-6" with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 FLEAT Standard Post (FLEAT-SP) 37'-6" with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 SEQUENTIAL KINKING TERMINAL (SKT-350) 50'-0" 50:1 Flare	VDOT ST'D. GR-9
	TL-3 SKT Standard Post (SKT-SP) 50'-0" 50:1 Flare	VDOT ST'D. GR-9
TRINITY INDUSTRIES	TL-3 SLOTTED RAIL TERMINAL (SRT-350) 6-Post System 37'-6" Straight-Line Flare with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 (SRT-350) 8-Post System 37'-6" Parabolic Flare with 4'-0" Offset	VDOT ST'D. GR-7
	TL-3 CAT	VDOT ST'D. GR-9
	TL-3 ET-2000 50'-0" 50:1 Flare	VDOT ST'D. GR-9
	TL-3 ET-PLUS 50'-0" 50:1 Flare	VDOT ST'D. GR-9
ENERGY ABSORPTION	TL-3 BRAKEMASTER	VDOT ST'D. GR-9
BARRIER SYSTEMS, INC.	TL-3 X-TENSION END TERMINAL	VDOT ST'D. GR-9

CRASHWORTHY LONGITUDINAL BARRIERS
(NCHRP 350 Approved)

BARRIER SYSTEMS, INC.	TL-3 Narrow Quick Change Moveable Barrier
IOWA DOT	TL- 3 Iowa PCB Temporary CMB F-shape with Pin and Loop Connection
ROCKINGHAM PRECAST	TL-3 Temporary CMB-F shape, 12'-0" long with Slotted Tube/T-Bar Connection

**CRASHWORTHY LONGITUDINAL BARRIERS
(NCHRP 350 Approved unless otherwise noted)
-continued-**

SMITH-MIDLAND	TL-3 Temporary Concrete Median Barrier F-shape with J-J Hook Connection
VIRGINIA DOT	Temporary Concrete Median Barrier F-shape with Pin and Loop connection (20'-0" Length)
BARRIER SYSTEMS, INC.	TL-3 Quickchange Moveable Barrier (QMB) Moveable Barrier
PENNSYLVANIA DOT	TL-3, 12'-6" Long Temporary Concrete Median Barrier F-Shape with Plate Connection

**PORTABLE VERTICAL PANELS
(NCHRP 350 Approved)**

IMPACT RECOVERY SYSTEM	Vertical Panel
WOUDENBERG ENTERPRISES	Msi Durastem Vertical Panel w/ Lightweight Warning Light
FLASHER HANDLING CORP.	Air Spill Barricade Vertical Panel
BENT MANUFACTURING COMPANY	Vertical Panel w/ Lightweight Warning Light ULTRA Vertical Panel w/ Lightweight Warning Light
WLI INDUSTRIES, INC.	SafetyCade Vertical Panel SafetyCade Extended Vertical Panel w/ Lightweight Warning Light
SERVICE SIGNING, L.C.	Vertical Panel
EASTERN METAL / U.S.A. SIGNS	Melba Vertical Panel

**MAILBOX SUPPORTS
(NCHRP 350 Approved)**

FRIEND INNOVATIONS	Snowplow Friendly Metal Cantilever Mailbox Support
FORESIGHT PRODUCTS, INC.	V-Loc Mailbox Support System
S-SQUARE TUBE PRODUCTS	Nex Tube Mailbox Support System

CHANNELIZING DEVICES WITH AUXILIARY DEVICES*
(NCHRP 350 Approved)

FLASHER HANDLING CORP.	Plastic Substrate Sign Panel Mounted on face of Drum.
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* Drums with Type A or C warning lights are acceptable as Category 1 devices and therefore will not be listed in this document.

PORTABLE SIGN SUPPORTS
(NCHRP 350 Approved)

EASTERN METAL/USA SIGNS	Super Flex Compact Stand with Fiberglass Leaf Spring C-102, C-132, C-142, C-200, C-202, C-232, C-242, C-802, C-832, C-842, C-902, C-942, X-501, X-550, X-551, X-600, X-601 Portable Sign Stands with roll-up signs only. Model Number X-842 with 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates, Model Number X-880 with 2mm AL/LDPE laminated substrate, and Model Numbers X552, X552b and X-602 with 2mm AL/LDPE laminated substrate.
FLASHER HANDLING CORP.	Bantam 2 portable sign stand, Featherweight 2 sign stand with roll-up signs.
DICKIE TOOL COMPANY	Model Numbers DL1003W, QLV-W, MSRIGID-30, QFV-60, QFV-84, PS-3330, PS-3330-S, DF3003, DF3000S, DF3003W, MSFLEX-30, QFV-48, DF3003S, PS-3000S, DF3000WQ, DF-4700, DF-4700TX, DF-4503, Uniflex 2000 and DL1003WQ with roll-up type sign only, and SLIP-60 with roll-up type sign.
MARKET DISPLAYS INTERNATIONAL (MDI)	Model Numbers 4814CS, 4814DLK, 4814HDK, 4814SSCK, 30CAM, 40CAM, 4814NSCK, 4884CS, 4860KA, 4850, 4812, 4815, 4814K with roll-up type signs. Model Numbers 4818 and 4860K with roll-up 10mm Coreplast and Inteplast corrugated plastic sign substrate or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) aluminum laminated substrate signs.

**PORTABLE SIGN SUPPORTS
(NCHRP 350 Approved)
continued**

<p align="center">KORMAN SIGNS, INC.</p>	<p>Model Numbers SS560, SS560A, SS560E, and SS560AE with roll-up type signs or 0.100" and 0.080" aluminum type signs or 6.55mm Solid Plastic (ABS) substrate, or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates. Minimum Mounting Height: 60" for diamond, 63" for rectangle. Model Numbers SS548, SS548A, SS548E, SS548AE, SS548C, SS548CE, SS548CA and S548CAE with roll-up type signs or 10mm corrugated plastic, or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates. Minimum Mounting Height: 21". Model Numbers SS548UC, SS548UCA, SS548UCX and SS548UCAX with roll-up type signs or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substrates. Model Numbers SS548UCR, SS548UCRA, SS560UCR, SS560UCRA, SS548UCRX, SS548UCRAX, SS560UCRX and SS560UCRAX with roll-up type sign only.</p>
<p align="center">TRAFFIX DEVICES, INC.</p>	<p>Big Buster Dual Spring Folding Leg sign stand with roll-up, 0.080" aluminum or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) aluminum laminated substrate, or 10mm Coreplast and Inteplast corrugated plastic sign substrate, Little Buster Dual Spring Folding Leg sign stand with roll-up, 0.080" aluminum mounted minimum 18 inches from bottom of sign, or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) aluminum laminated substrate, or 10mm Coreplast and Inteplast corrugated plastic sign substrate, Econo Buster sign stands with roll-up or 2mm AL/LDPE sign.</p>
<p align="center">SIGN UP CORPORATION</p>	<p>Model Numbers 1000X, 5000X, X-CELL, MS-2000xi, 27-SSX, 38-SSB, 48-SSB sign stands with roll-up type signs only.</p>
<p align="center">RADIATOR SPECIALITY COMPANY</p>	<p>Model Numbers JL1000, JS3000, JS4000, JS4700 with roll-up signs only.</p>

**PORTABLE SIGN SUPPORTS
(NCHRP 350 Approved)
(continued)**

PACIFIC SAFETY SUPPLY, INC.	Model Numbers PS-3330 and PS-3000-S sign stands with roll-up type signs.
LANG PRODUCTS INTERNATIONAL, INC.	Model Numbers Basic TM 48, Basic TM 48 stand w/SnapFlag TM Dual Warning Flag system, CrossWindTM 204-HD, CrossWindTM 204-HD w/SnapFlag Dual Warning Flag system, 404-HD2 and 405-HD2. All models are to use roll-up type signs.
FLEX-O-LITE SERVICES AND MATERIALS CO.	Model Numbers QLV-W, QFV60, QFV-W, QFV48 sign stands with roll-up type signs.
BONE SAFETY SIGNS	Model Numbers SZ-412, SZ-412/S, SZ-460, SZ-460/S, SZ-484, SZ-484/S sign stands with roll-up type signs.

**TYPE III BARRICADES*
(NCHRP 350 Approved)**

BENT MANUFACTURING COMPANY	WZ-06 Approval Number
RECYCLED PLASTIC PRODUCTS	WZ-03 Approval Number
FLASHER HANDLING CORP.	WZ-12, WZ-40 Approval Number
CANTEL OF MEDFORD, INC.	WZ-31 Approval Number
DAVIDSON PLASTICS CORP.	WZ-39, WZ-63, WZ-179 Approval Number
EASTERN METAL/USA SIGNS.	WZ-59, WZ-103A Approval Number
PLASTIC SAFETY SYSTEMS, INC.	WZ-61, WZ-102, WZ-152, WZ-166, WZ-190, and WZ-196, WZ-233 Approval Number
AMERICAN FENCE & FAB, INC.	WZ-65 Approval Number
PROTECTION SERVICES, INC.	WZ-70 Approval Number
ST. LOUIS STEEL PRODUCTS	WZ-71 Approval Number
PLASTIC SAFETY SYSTEMS, INC.	WZ-72 Approval Number
BUNZL EXTRUSION TACOMA, INC.	WZ-77 Approval Number

TYPE III BARRICADES*
**(NCHRP 350 Approved
continued**

THREE D TRAFFIC WORKS, INC.	WZ-82 Approval Number
TRAFFIC DEVICES, INC.	WZ-108 Approval Number
IMPACT RECOVERY SYSTEM, INC.	WZ-110 Approval Number
TRAFCON, INC.	Type III Barricade (WZ-116 Approval Number)
KORMAN SIGNS	WZ-100 through 100#7 Approval Number
PMG LOBO LIMITED	WZ-104 Approval Number
NES WORK SAFE	WZ-120 Approval Number
NES WORK SAFE	Type III Barricade (WZ-120 Approval Number)
XCESSORIES SQUARED	Type III Barricade (WZ-148 Approval Number)
UNITED RENTALS HIGHWAY TECHNOLOGIES	WZ-117, WZ-136
DAVIDSON TRAFFIC CONTROL PRODUCTS	WZ-151 Approval Number
WESTERN HIGHWAY	WZ-155 Approval Number
TRAFFIC SAFETY SERVICES	WZ-197 AND 197#1

* Any Type III Barricade may have roll-up signs attached and still be in compliance with NCHRP 350 requirements. In addition, 10mm corrugated plastic or 2mm AL/LDPE (Alpolic, Reynolite and Dibond) laminated substitutes mounted a minimum of 87" to the top of the sign unless otherwise directed by the FHWA may be used and still be in compliance with NCHRP 350 requirements.

TRUCK MOUNTED ATTENUATORS *
(NCHRP 350 Approved)

ENERGY ABSORPTION	TL-3 ALPHA 100K TMA TL-3 SAFE STOP TMA
TRINITY INDUSTRIES SYRO STEEL	TL-3 MPS 350 TMA
IMPACT ABSORPTION	TL-3 VANDERBILT TMA
ALBERT UNRATH, INC.	TL-3 U-MAD 100K TMA
TRAFFIX DEVICES, INC.	TL-3 SCORPION C 10,000 TMA
RENCO, INC.	TL-3 RAM 100K TMA

TRAILER MOUNTED ATTENUATORS *
(NCHRP 350 Approved)

ENERGY ABSORPTION SYSTEMS, INC.	TL-3 VORTEQ TMA
TRAFFIX DEVICES, INC.	TL-3 SCORPION TMA
U-MAD TRAILER	TL-2 & TL-3 BARRIER SYSTEMS
GREGORY INDUSTRIES, INC.	TL-3 TTMA-100 TMA