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2012 UPDATE TRAINING

Maintenance of Traffic



2012 Design Standards

Summary of Major Changes



Effective July 1, 2012

Index 600 Sheet 3

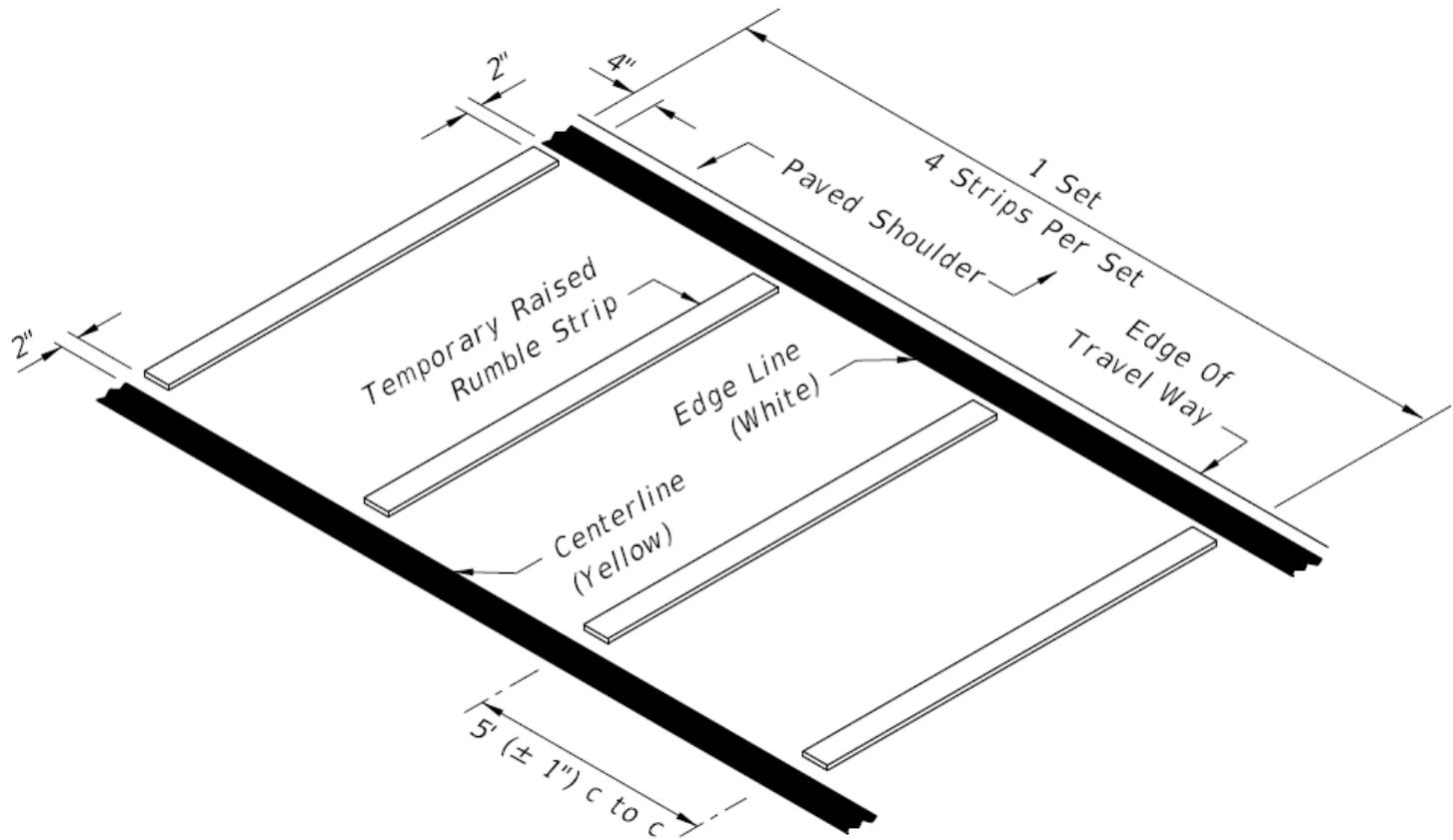
High-Visibility Safety Apparel

Shall meet ANSI/ISEA 2010 and 2004

- No changes to the Performance Class scheme
- Requirements for rainwear background fabric
- Changes related to design features
- Optional criteria for Flame Resistant items
- Guidance on service life of apparel

Index 600 Sheet 4

Removable Polymer Rumble Strip



REMOVABLE POLYMER RUMBLE STRIP SET
(PAVED SHOULDER SHOWN)

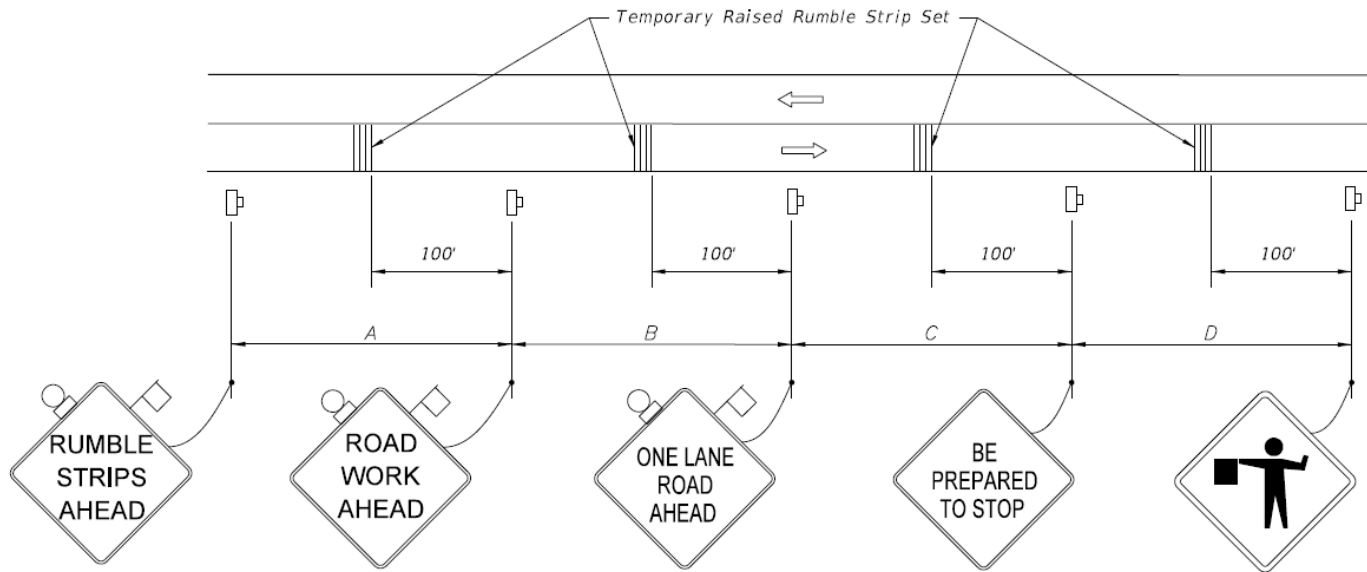
Index 600 Sheet 4

Removable Polymer Rumble Strip



Index 600 Sheet 4

Removable Polymer Rumble Strip

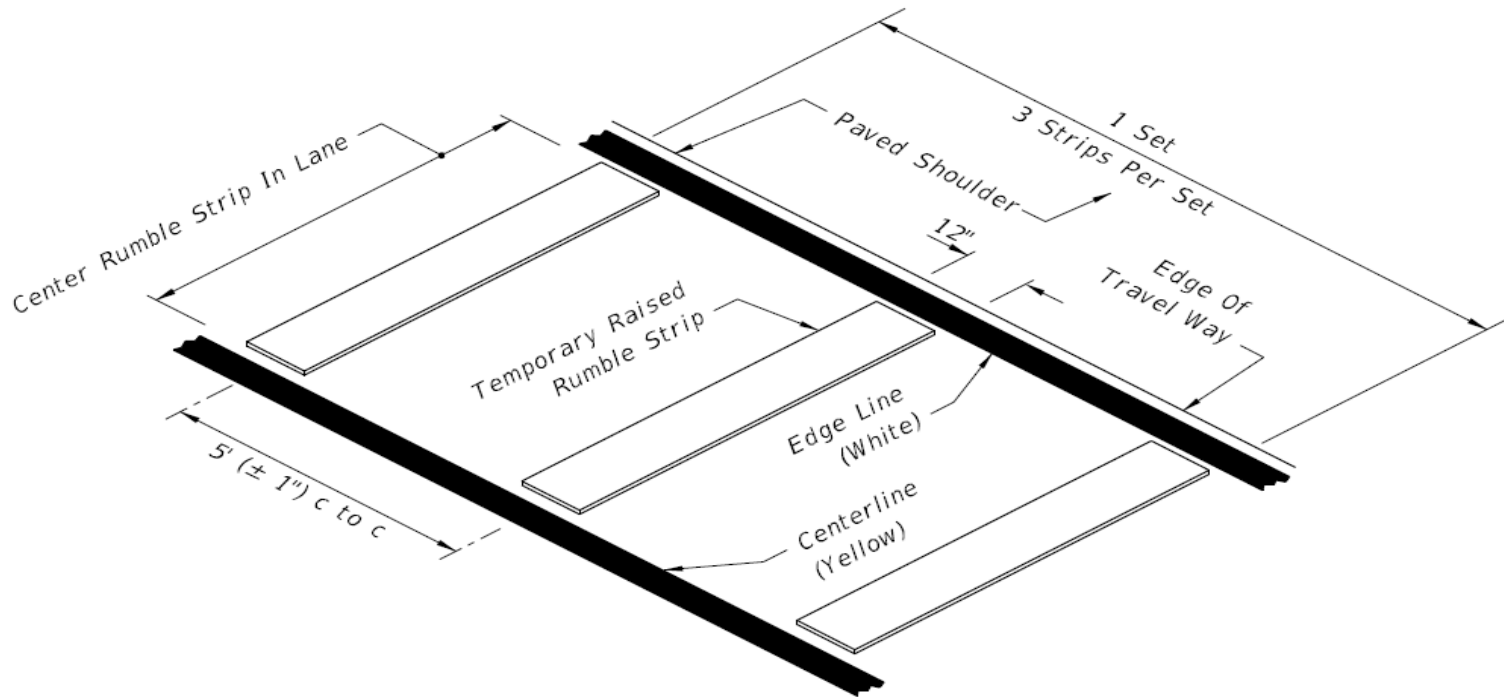


TYPICAL PLACEMENT OF TEMPORARY RAISED RUMBLE STRIPS

DISTANCE BETWEEN SIGNS				
Speed (mph)	Spacing (ft.)			
	A	B	C	D
40 or less	200	200	200	100
45	350	350	350	175
50	500	500	500	250
55 or greater	500	1640	1000	500

Index 600 Sheet 4

Molded Engineered Polymer Rumble Strip



MOLDED ENGINEERED POLYMER RUMBLE STRIP SET
(PAVED SHOULDER SHOWN)

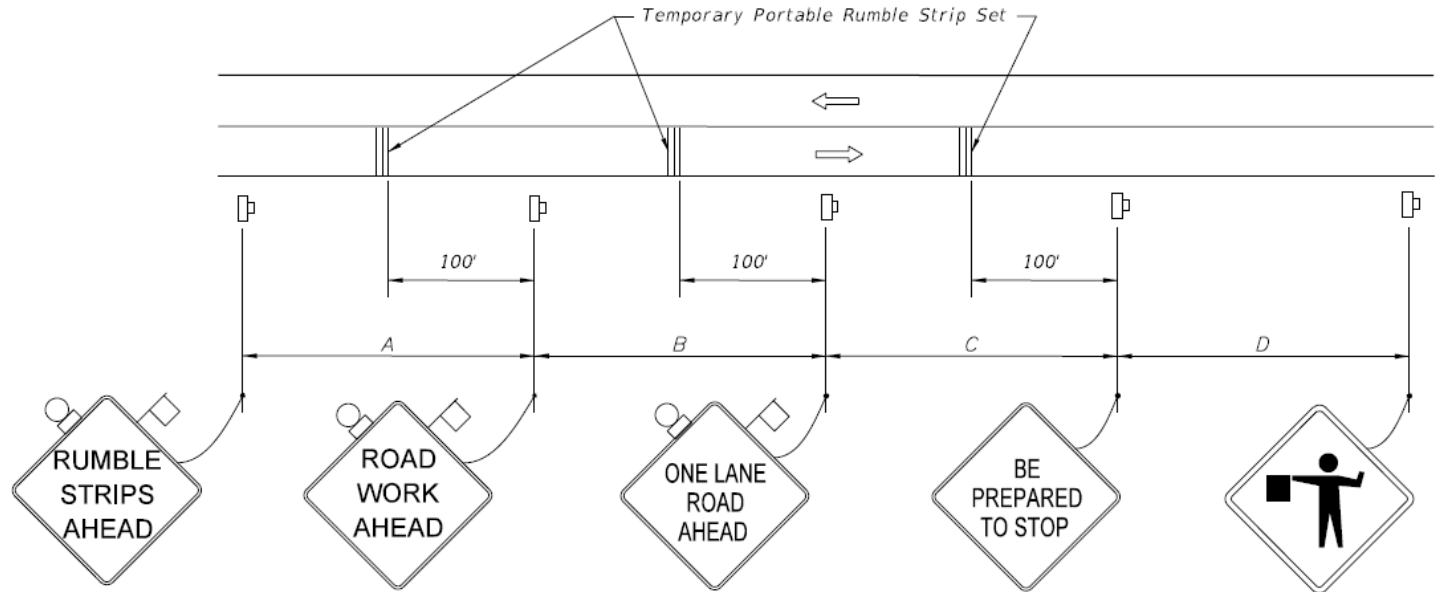
Index 600 Sheet 4

Molded Engineered Polymer Rumble Strip



Index 600 Sheet 4

Molded Engineered Polymer Rumble Strip



TYPICAL PLACEMENT OF TEMPORARY INTERNALLY BALLASTED RUMBLE STRIPS

DISTANCE BETWEEN SIGNS				
<i>Speed (mph)</i>	<i>Spacing (ft.)</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>40 or less</i>	<i>200</i>	<i>200</i>	<i>200</i>	<i>100</i>
<i>45</i>	<i>350</i>	<i>350</i>	<i>350</i>	<i>175</i>
<i>50</i>	<i>500</i>	<i>500</i>	<i>500</i>	<i>250</i>
<i>55 or greater</i>	<i>500</i>	<i>1640</i>	<i>1000</i>	<i>500</i>

Index 600 Sheet 4

PLAN PREPARATION MANUAL

10.12.16 Temporary Raised Rumble Strip Sets

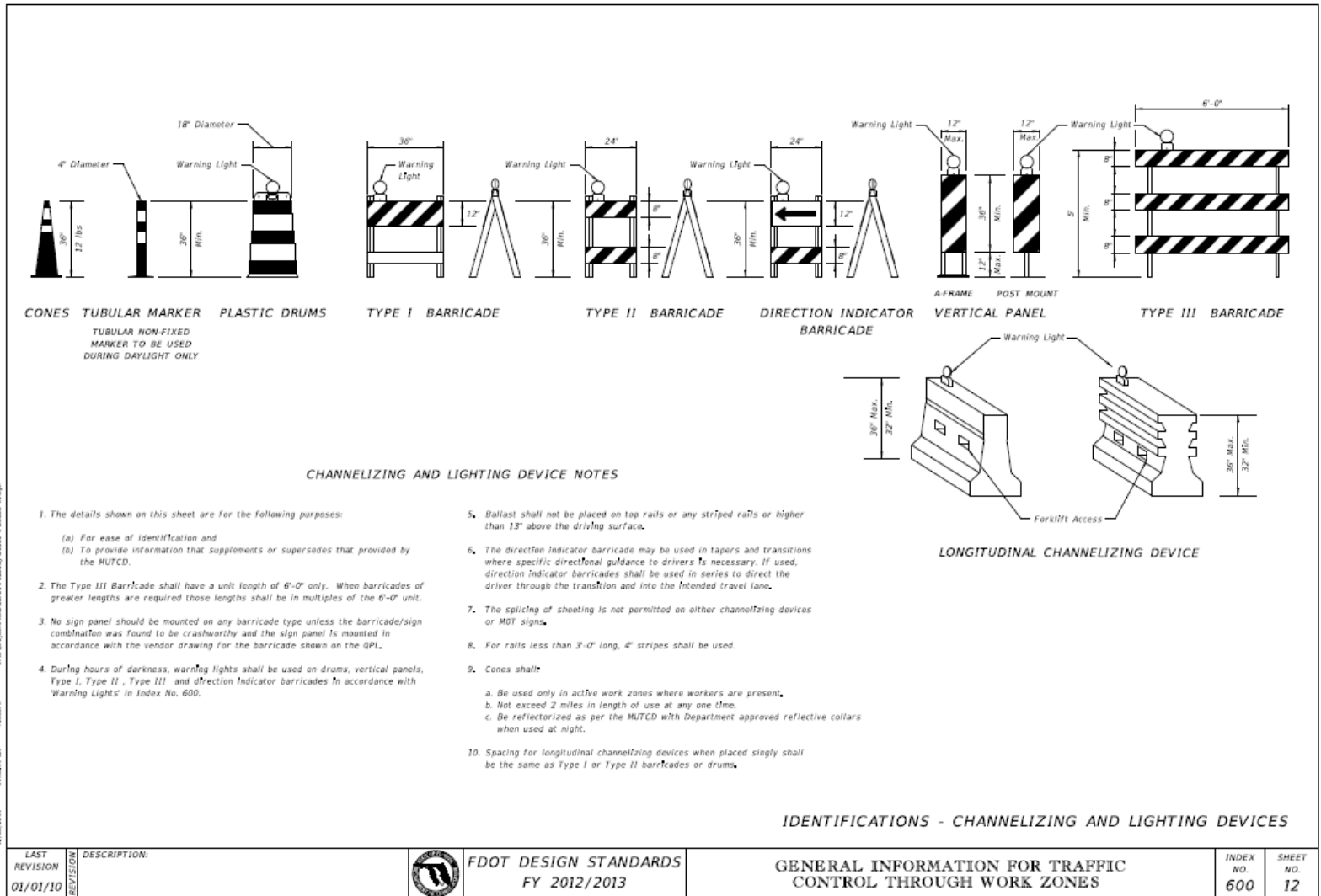
Temporary raised rumble strips should be considered in addition to normally used warning signs/devices on the approach to flagging operations where additional alertness is desired of drivers approaching flagging operations. Work zones in an isolated location or with sharp horizontal or vertical curves may benefit from the additional advance warning by alerting drivers visually, audibly, and tactilely of the approaching work zone.

PAY ITEM

102-910- TEMPORARY RAISED RUMBLE STRIP SET

Index 600 Sheet 12

Longitudinal Channelizing Devices (LCD)



LAST REVISION	DESCRIPTION
01/01/10	



FDOT DESIGN STANDARDS
FY 2012/2013

GENERAL INFORMATION FOR TRAFFIC
CONTROL THROUGH WORK ZONES

INDEX NO.	SHEET NO.
600	12

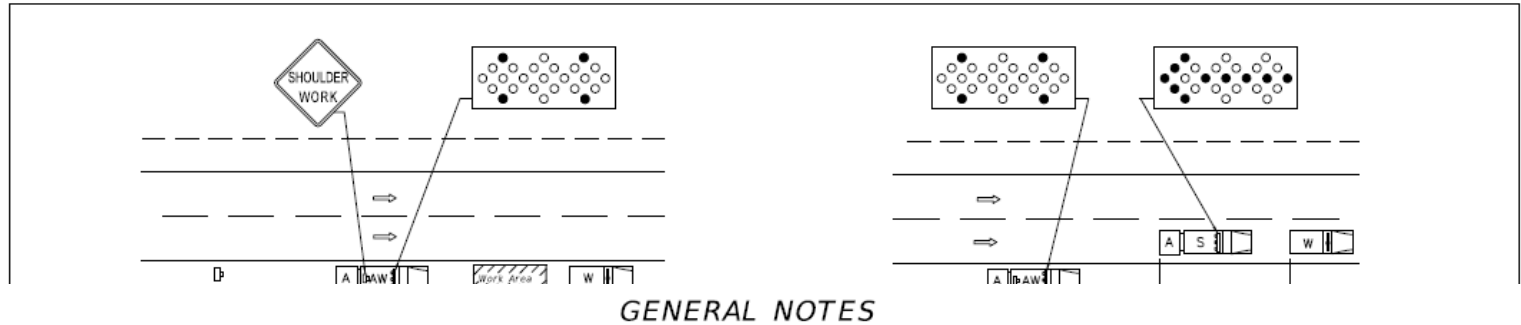
Index 600 Sheet 12

Longitudinal Channelizing Devices (LCD)



Index 619 Sheet 1

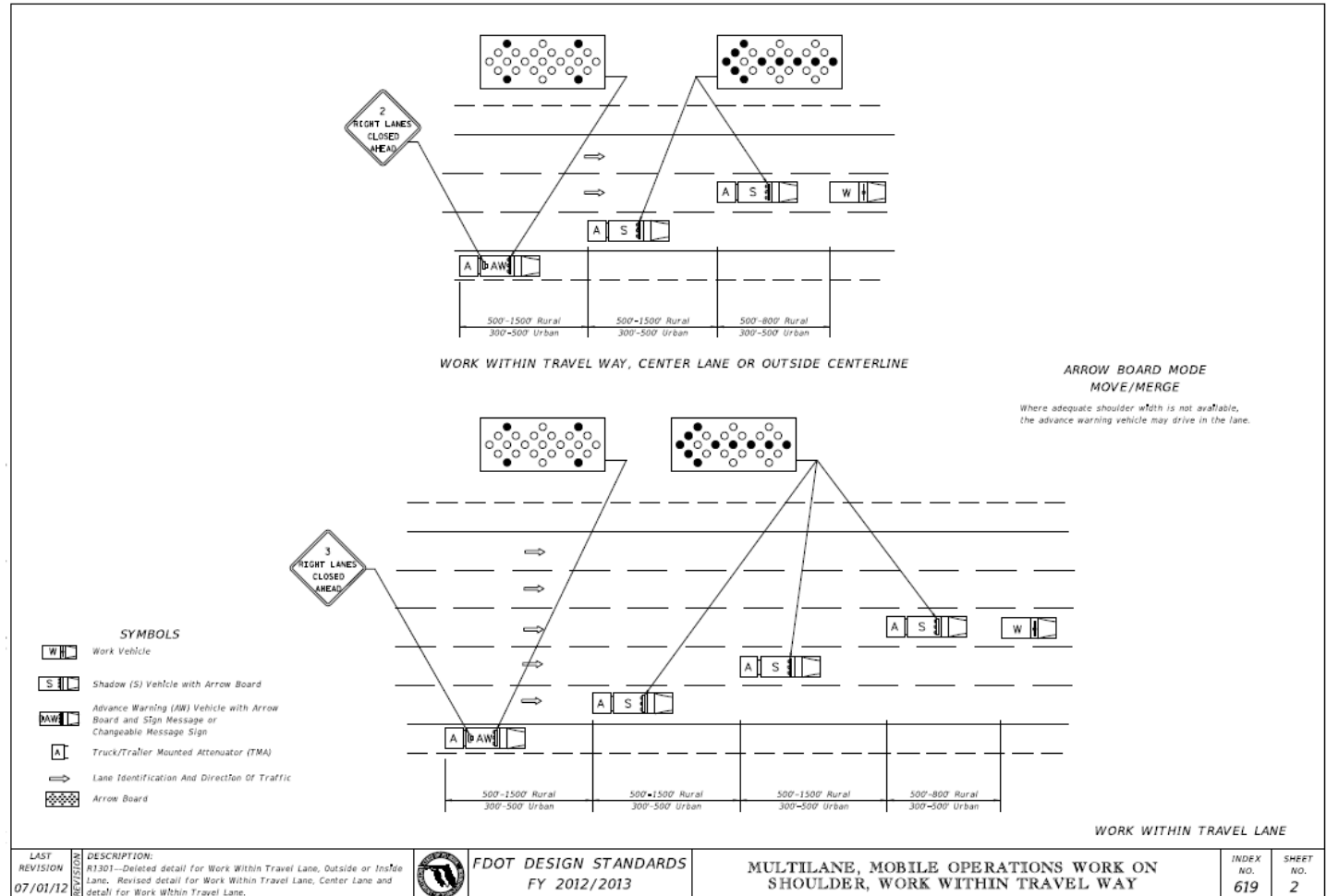
Multilane, Mobile Operations Work on Shoulder, Work Within Travel Way



1. These illustrations are representative of general conditions.
2. The figures illustrate closing the right shoulder or right lanes for various lane configurations. When work is required on left side of roadways, the inverted plan is to be applied. The intent of this index is to allow passing on only one side of the work convoy.
3. Arrow boards shall not be obscured by equipment, supplies, signs, or the enclosure.
4. Vehicle-mounted signs shall be mounted with the bottom of the sign at a minimum height of 48 inches above the pavement. Vehicle mounted changeable message signs may be used in lieu of truck mounted static signs. Changeable message signs shall flash alternately to read "Left or Right Lane" or "Two Left or Two Right Lanes", "Closed Ahead", and the arrow symbol. Arrow boards shall not be used with truck mounted changeable message signs. Sign legends shall be covered or turned from view when work is not in progress.
5. On freeway facilities (interstates, toll roads, and expressways), a traffic control officer is required for all nighttime operations for work within the travel lane.
6. If the work vehicle speed exceeds the minimum legal speed limit on limited access facilities and one half the posted speed limit on other facilities, the Engineer may delete requirements for shadow vehicle and attenuator. The work vehicle will be required to have an arrow board and sign message.
7. Where work activities within 2' of the edge of travel way are Incidental (i.e. Mowing, Litter Removal), the Engineer may delete requirements for signs and the advance warning vehicle provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
8. Work, Shadow, and Advance Warning Vehicles shall have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
9. Functional two-way communication is required between all vehicles in the mobile operation convoy.
10. For general TCZ requirements and additional information, refer to Index No. 600.

Index 619 Sheet 2

Multilane, Mobile Operations Work on Shoulder, Work Within Travel Way



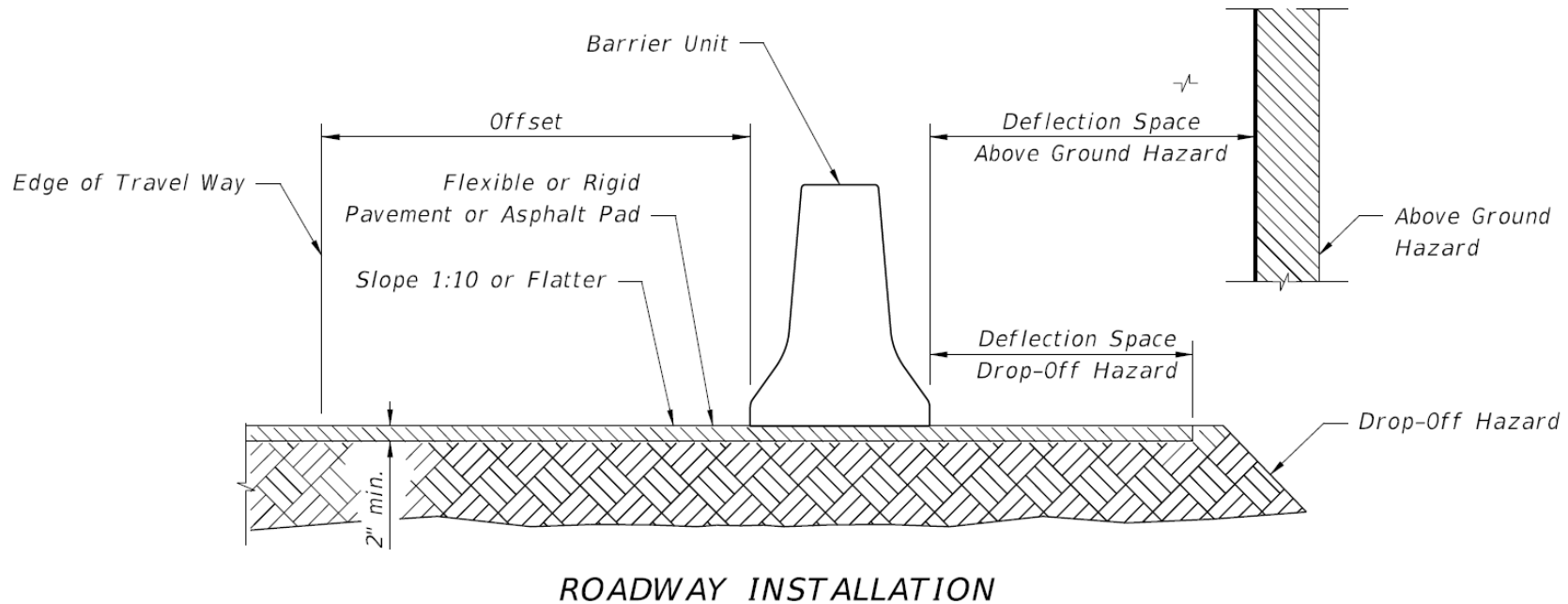
Concrete Barrier System

Index 415

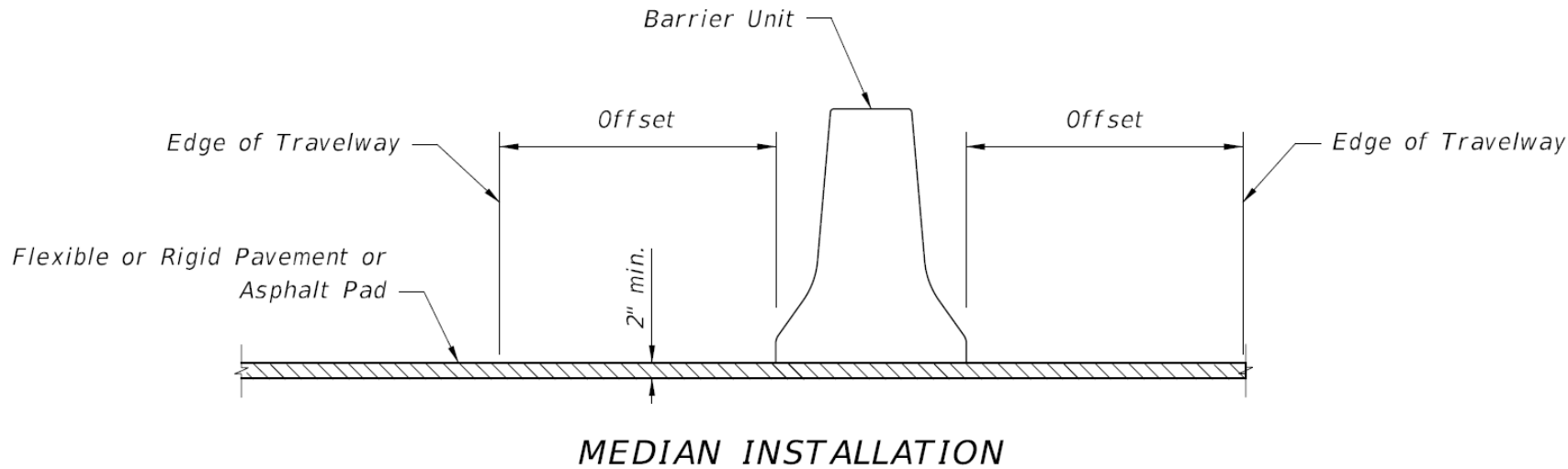


Index 415 units constructed prior to October 1, 2002 may be used ~~until September 30, 2012~~ THROUGH JUNE 30, 2012 LETTING with usage of 'FDOT Snake Pin' Interconnection

Concrete Barrier System Index 415



Concrete Barrier System Index 415

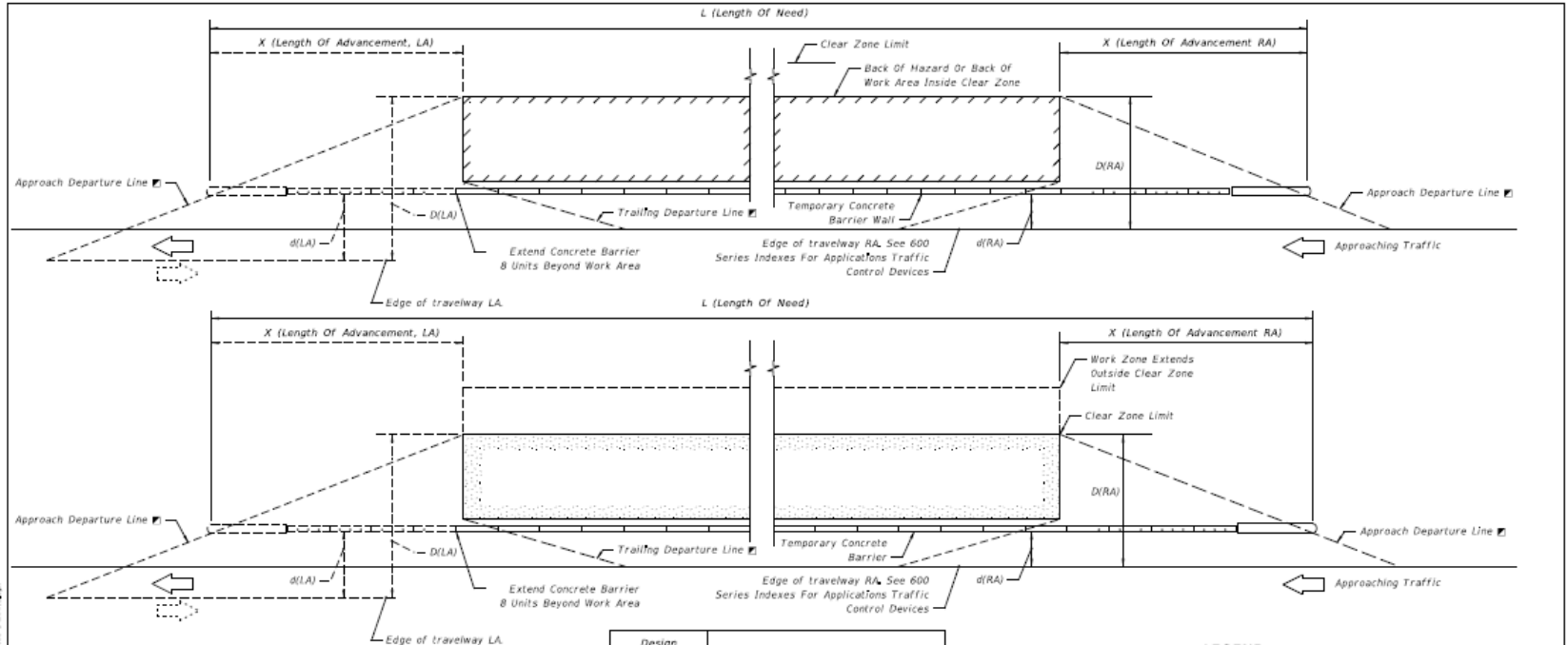


Concrete Barrier System

Index 415

<i>OFFSET AND DEFLECTION SPACE REQUIREMENTS</i>					
<i>Installation</i>	<i>Shielding</i>	<i>Work Zone Speed</i>	<i>Offset to Travelway</i>	<i>Deflection Space</i>	
<i>Right Shoulder</i>	<i>Above Ground Hazards</i>	<i>45 mph or Less</i>	<i>1' min, 2' preferred</i>	<i>2' min.</i>	
		<i>50 mph and Greater</i>	<i>2' min, 4' preferred</i>	<i>4' min.</i>	
	<i>Drop-Off Hazards</i>	<i>45 mph or Less</i>			
		<i>50 mph and Greater</i>			
		<i>a. Drop-offs 4' or Less and NO traffic below</i>	<i>2' min, 4' preferred</i>	<i>2' min.</i>	
		<i>b. All drop-off conditions other than 'a'</i>	<i>2' min, 4' preferred</i>	<i>4' min.</i>	
<i>Separating Traffic</i>	<i>Adjacent Opposing Traffic</i>	<i>45 mph or Less</i>	<i>1' min, 2' preferred</i>	<i>1' min., 2' preferred</i>	
		<i>50 mph and Greater</i>	<i>2' min, 4' preferred</i>	<i>2' min., 4' preferred</i>	

Concrete Barrier System Index 415



CLEAR ZONE WIDTHS FOR WORK ZONES

The term 'clear zone' describes the unobstructed relatively flat area, impacted by construction, extending outward from the edge of the traffic lane. The table below gives clear zone widths in work zones for medians and roadside conditions other than for roadside canals; where roadside canals are present, clear zone widths are to conform with the distances to canals as described in Volume I, Chapter 4, Section 4.2 and Exhibit 4-A and 4-B of the Plans Preparation Manual.

WORK ZONE SPEED (MPH)	TRAVEL LANES & MULTILANE RAMP (feet)	AUXILIARY LANES & SINGLE LANE RAMP (feet)
60-70	30	18
55	24	14
45-50	18	10
30-40	14	10
ALL SPEEDS CURB & GUTTER	4' BEHIND FACE OF CURB	4' BEHIND FACE OF CURB

Design Speed mph	X (Length Of Advancement) Ft.
≤45	16 (D-d)
≥50	13 (D-d)

Equation Variables:

L=(Length of Need) = The distance a longitudinal barrier must be extended in advance of an area of concern in order to adequately shield the hazard.

X=(Length of advancement) = The distance a longitudinal barrier must be extended in advance of an area of concern in order to adequately shield the hazard

D(RA), D(LA) = Distance in feet from the near edge of the travel way to the back of the hazard or the clear zone limit, whichever is less

d(RA), d(LA) = Distance in feet from the near edge of the travel way to the face of the barrier

Departure line = A line extending from the Point of Departure to the back of a hazard or clear zone. The point at which a barrier intersects the departure line establishes the beginning of both the Length of Need and the Length of Advancement.

LEGEND

LA - Left Approach
RA - Right Approach

Departure Rates
1:16 For Speeds ≤ 45 mph
1:13 For Speeds ≥ 50 mph

[Hatched Area] Area Shielded When Work Zone Hazards Or The Work Area Occupy Space Less Than Clear Zone Width

[Dotted Area] Area Shielded When Work Zone Hazards Or The Work Area Extend To Or Beyond Clear Zone Limit

[Dotted Line] Dot Indicates Number Of Bolt Anchors Or Stakes

STRAIGHT ALIGNMENT AND LENGTH OF NEED

LAST REVISION	DESCRIPTION
01/01/12	

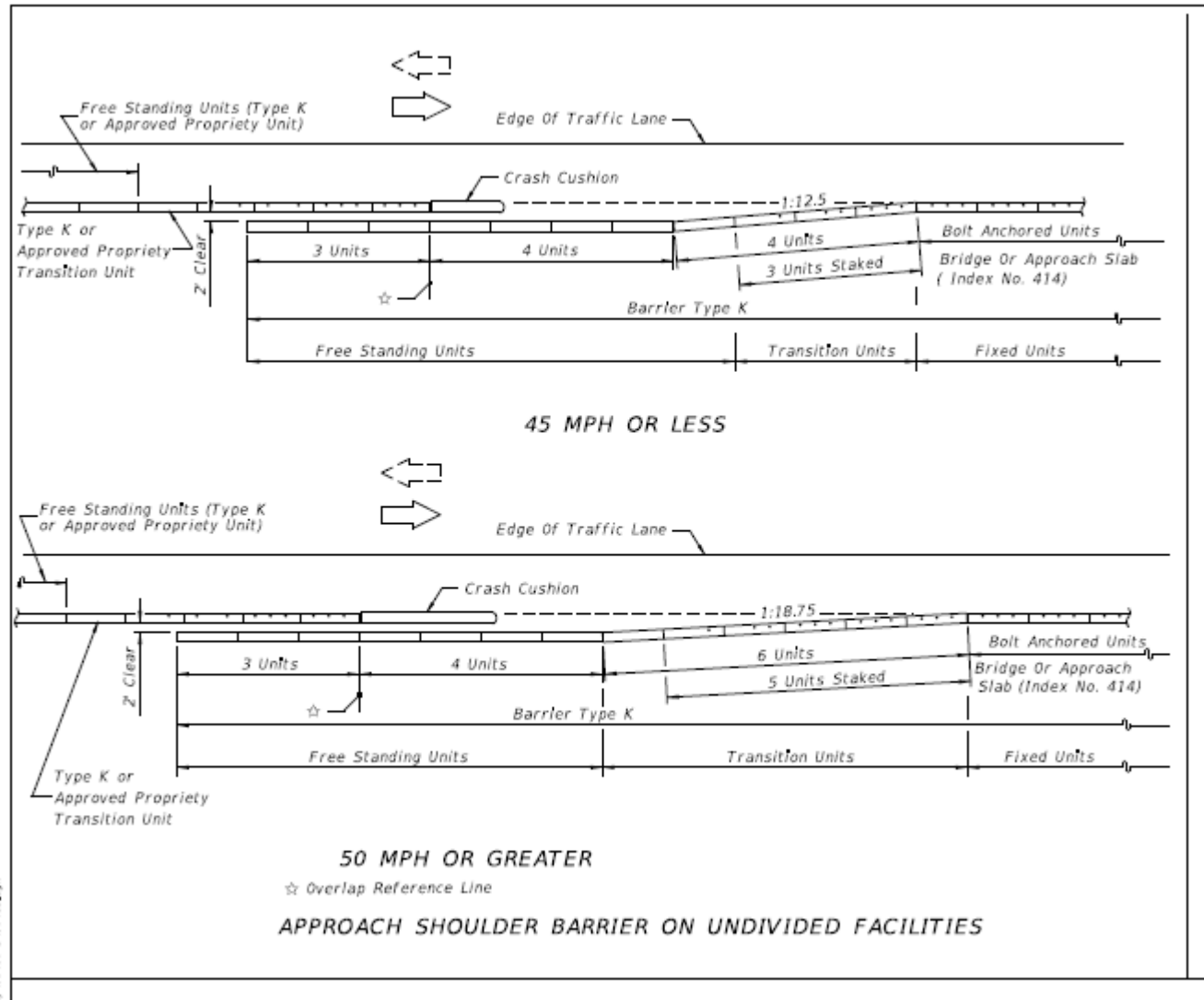


FDOT DESIGN STANDARDS
FY 2012/2013

TEMPORARY CONCRETE BARRIER

INDEX NO.	SHEET NO.
415	3

Concrete Barrier System Index 415



Crash Cushions (QPL)

The Florida Department of Transportation is currently reviewing our policies and Design Standards on Crash Cushions. Until such time as a Design, Specification and/or Construction Bulletin is issued, all existing policies, Design Standards and Qualified Product Lists remain in effect.

Crash Cushions (QPL)

The drawing shows two views of an inertial crash cushion array. The left view shows a side profile with a barrier wall alignment, a clear runout area, and a departure line. The right view shows a top-down perspective of the array modules, which are circular in plan view with diameters of 400, 200, 200, 200, 2100, 1400, 700, and 400 units. A large red 'X' is superimposed over the entire drawing, indicating that the design is not approved or is obsolete.

INERTIAL CRASH CUSHION ARRAYS

NOTES FOR TEMPORARY GATING CRASH CUSHION ARRAYS

1. Temporary gating crash cushion systems listed on this Index can be used on the State Highway System when all of the following conditions are met:
 - (a) The temporary concrete barrier wall approach ends.
 - (b) The temporary crash cushion or inertial crash cushion is installed in the plans.
 - (c) Use of the temporary crash cushion or inertial crash cushion will not exceed 30 calendar days in duration.
2. Inertial crash cushion arrays shall be used in conjunction with temporary gating crash cushion, and a clear runout area shall be provided. The arrays shown can be used for outer roadway flare areas, and for median flare areas where the median width is sufficient to provide a clear zone width between the near lane of the opposing traffic and the near edge of the traffic lane.
3. Inertial crash cushion modules shall be constructed of either new or recycled materials in accordance with the materials and recommendations, and can be constructed of either new or recycled materials.
4. Anchorage of barrier wall end segments shall be in accordance with Index No. 11860 and shall be constructed of either new or recycled materials.
5. A yellow post mounted Type I Object Marker shall be used in accordance with Index Nos. 11860 and 11861 in the cost of the crash cushion.
6. Temporary gating crash cushion systems listed on this Index (QPL) may be substituted for the crash cushion arrays shown in this Index, provided a configuration of the QPL has been detailed in the approved QPL drawings. Manufacturers seeking approval of temporary gating crash cushion systems shall submit application along with design drawings and documentation showing the crash cushion system is compatible with FDOT temporary barrier wall systems and results for consistency with FDOT temporary barrier wall systems and uses. If approved, installation drawings signed and sealed by a professional engineer licensed in the State of Florida shall be submitted to the contract unit price for Vehicular Impact Attenuator/Crash Cushion.

TEMPORARY INERTIAL CRASH CUSHION ARRAYS

CONCRETE BARRIER WALL

2010 FDOT Design Standards		Last Revision	Sheet No.
		07/01/05	1 of 1
INERTIAL CRASH CUSHION		Index No.	417

Questions

Questions