## GENERAL NOTES

1. Temporary concrete barrier systems on roadways may be any of the following:

   a. The FDOT Type K Temporary Concrete Barrier system (Design Standard Index 414). F-Shape Units. For temporary concrete barrier systems on bridges see Design Standard Index No. 414.

   b. Proprietary temporary concrete barrier systems meeting NCHRP Report 350 Test Level 3 criteria which are included on the Approved Products List.

2. Barrier units of dissimilar types may be interconnected within a single line barriers using transition units.

3. Alignment, length of need, anchorage and end treatment shall be in accordance with this Index.

4. Temporary concrete barrier units shown herein shall not be used for permanent barrier wall construction regardless of unit length.

5. If the plans specify Barrier (Temporary) (Type K), substitution with other barrier types is not permitted.

6. If the plans specify temporary concrete barrier system, substitution with water filled barriers is not permitted.

7. Where existing pavement is not present, construct an Asphalt Pad using Miscellaneous Asphalt Pavement. Cost of the Asphalt Pad to be included in the cost of the Barrier system.

8. Barrier Delineators meeting the requirements of Specifications Section 993 are to be mounted on top of temporary concrete barriers that are used as barriers along traveled ways in work zones. The barrier delineators are to be spaced at 50' centers in transitions, 100' centers on curves and 200' centers on tangent roadways. Color must match adjacent longitudinal pavement marking.

9. Barrier units used for work zone traffic control and other temporary applications shall be paid for under the contract unit price for Barrier (Temporary), LF.

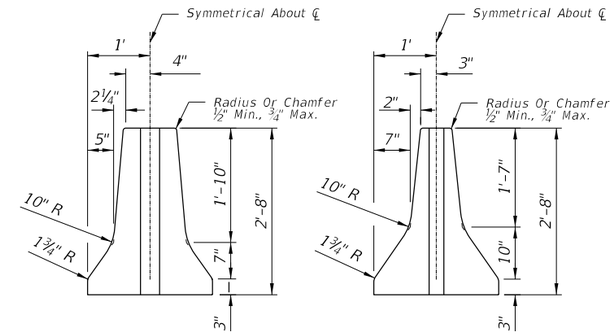
10. Deflection space shall be clear of any grass, construction debris, stockpiled materials, equipment, and objects.

11. Placing alternate temporary barrier systems with heights greater than 32 inches within the work zone may obstruct the clear sight distance at intersections and driveways. Prior to placing these barrier systems, the contractor shall submit a Certification Statement that the clear sight distance meets the requirements of Index 546, signed and sealed by a Florida Professional Engineer.

12. Minimum temporary concrete barriers installed per run shall be 16 units.

### OFFSET AND DEFLECTION SPACE REQUIREMENTS

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

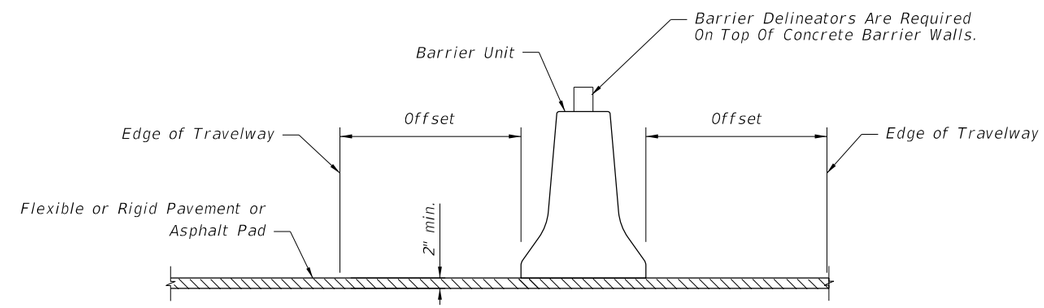



F-SHAPE N.J. SHAPE

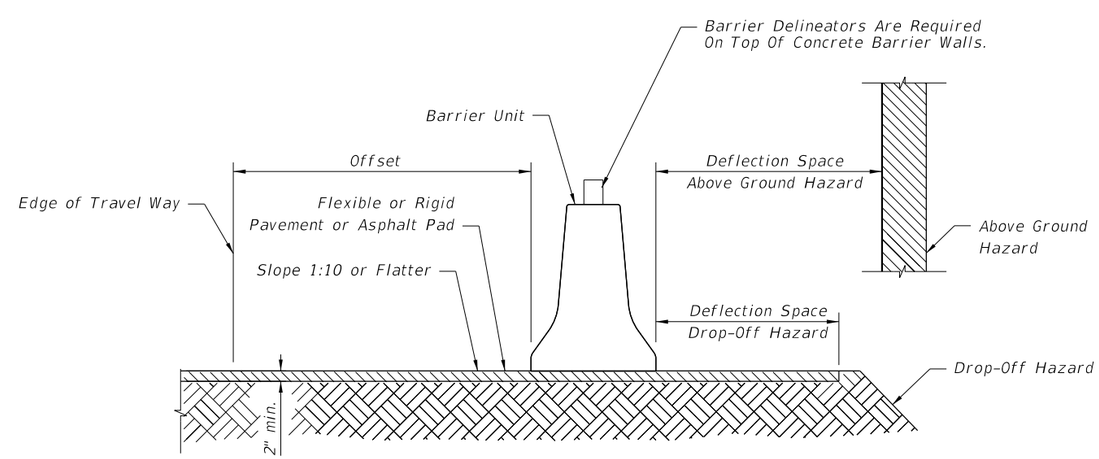
END VIEWS

REINFORCEMENT AND OTHER UNIT FABRICATION DETAILS NOT SHOWN.

PERMITTED BARRIER UNIT END VIEWS

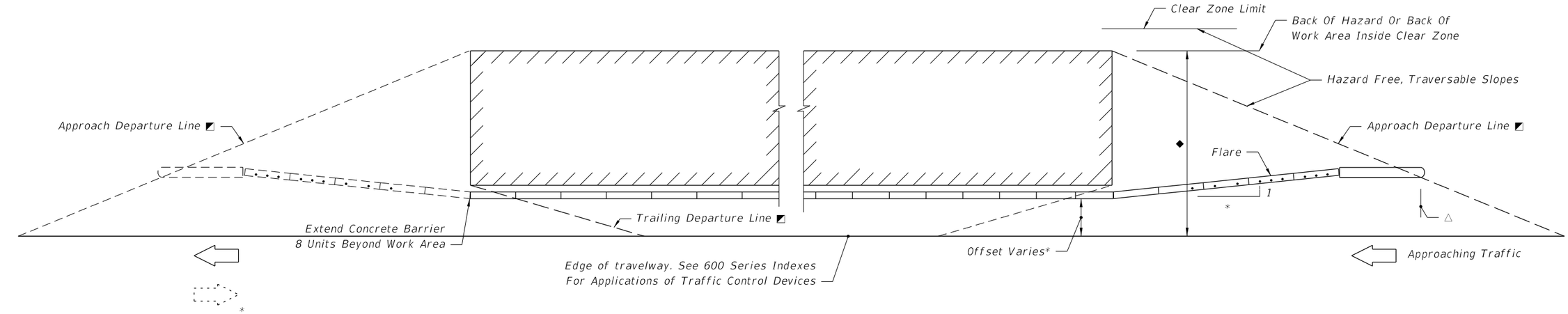



MEDIAN INSTALLATION



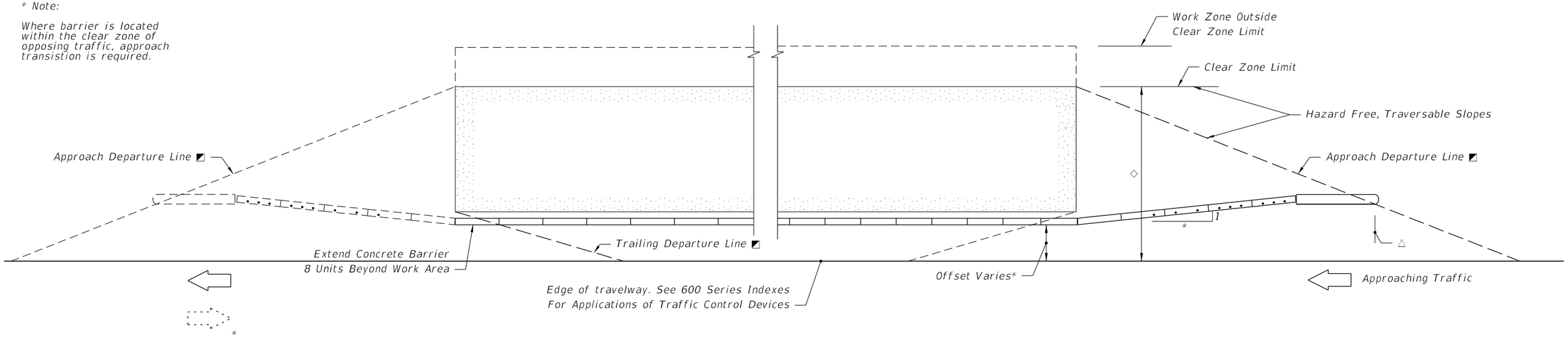

ROADWAY INSTALLATION

9:29:54 AM 6/11/2015




* Note:

Where barrier is located within the clear zone of opposing traffic, approach transistion is required.




△ The approach departure line location is determined by the line intersect with the back of the hazard or the area to be shielded, however the intersect offset distance is not to be beyond the clear zone limit. The trailing departure line is determined by the line intersect with the front of the downstream end of the hazard or the area to be shielded.

The length of barrier wall need is the distance from the approach departure line intersect with the upstream toe of the temporary concrete barrier wall to the trailing departure line intersect with the downstream toe of the temporary concrete barrier wall.

Where temporary concrete barrier wall Temporary concrete barrier wall end units shall be located at or outside the clear zone or shielded by other structure, earth embedment or a crash cushion.

Proprietary redirective crash cushions designed for use with temporary concrete barriers have the beginning length of need and departure line intersect point indicated on the respective APL drawing for each proprietary crash cushion. Where redirective crash cushions are located on the departure line by their length of need reference point, the wall upstream end unit must be aligned with the crash cushion, and the wall's end unit secured with bolts or stakes. See Sheets 3 through 6 for configurations requiring end unit anchorage.

* The wall offset from the near traffic lane, wall flare rate and wall flare length are to be in conformance with the alignment called for in the plans and the alignments called for by Department Design Standards specified in the plans; in absence of either plan requirement, the offset shall be as determined by the Engineer, and, unless other flare rates are approved by the Engineer the flare rates to be applied are 1:10 or flatter for speeds ≤ 45 mph and 1:15 or flatter for speeds ≥ 50 mph; see Index No. 642 for other flare rates on freeway facilities.

The surface cross slope approaching the barrier wall and continuing across the required deflection space shall not exceed a rate of 1 vertical: 10 horizontal.

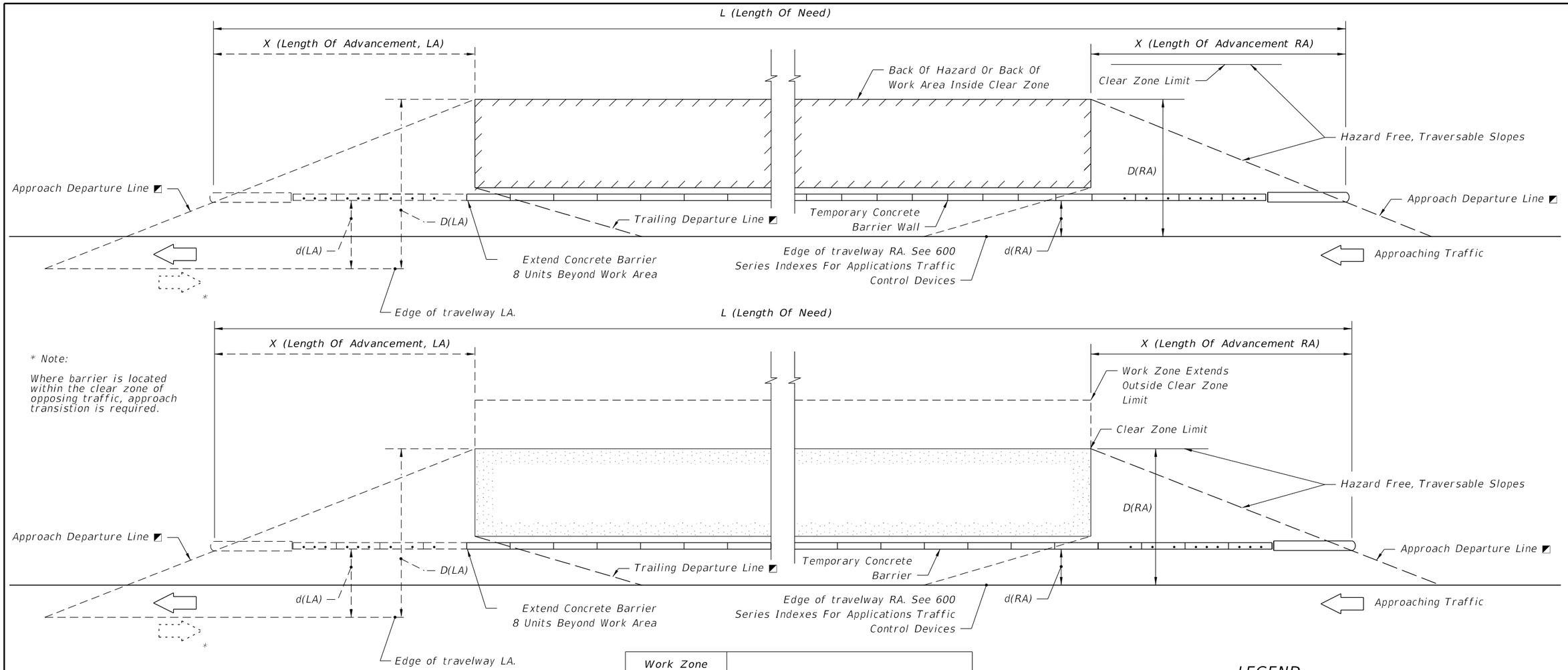
◩ Departure Rates
1:16 For Speeds ≤ 45 mph
1:13 For Speeds ≥ 50 mph

◆ Area Shielded When Work Zone Hazards Or The Work Area Occupy Space Less Than Clear Zone Width

◇ Area Shielded When Work Zone Hazards Or The Work Area Extend To Or Beyond Clear Zone Limit

• • • Dot Indicates Number And Position Of Bolts Or Stakes

# ALIGNMENT AND LENGTH OF NEED




* Note:

Where barrier is located within the clear zone of opposing traffic, approach transistion is required.

## 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.

| CLEAR ZONE WIDTHS FOR WORK ZONES | | |
|---|---|---|
| WORK ZONE SPEED (MPH) | TRAVEL LANES & MULTILANE RAMPS (feet) | AUXILIARY LANES & SINGLE LANE RAMPS (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 |

| Work Zone 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, which ever 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

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

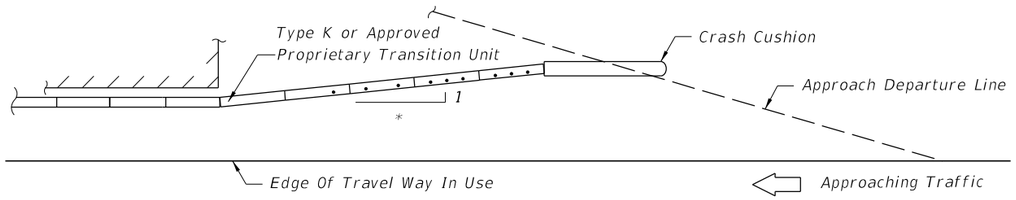
Area Shielded When Work Zone Hazards Or The Work Area Extend To Or Beyond Clear Zone Limit

• • • Dot Indicates Number And Position Of Bolts Or Stakes

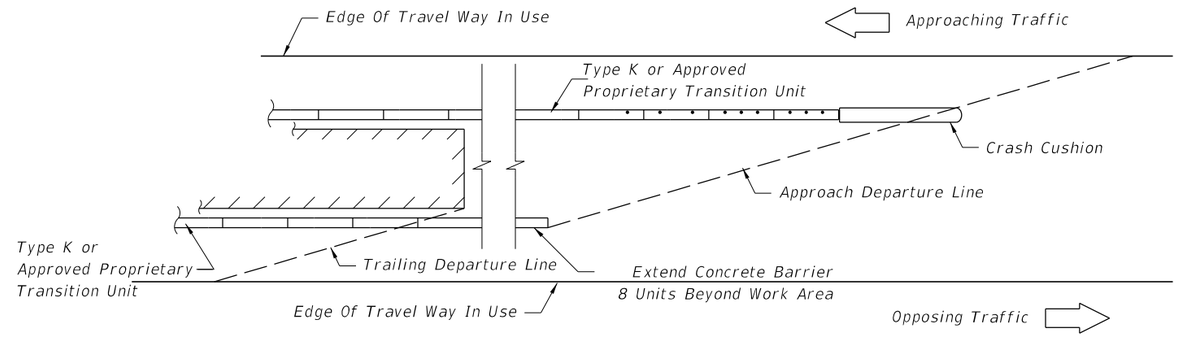
# STRAIGHT ALIGNMENT AND LENGTH OF NEED

6/8/2015 11:44:17 AM

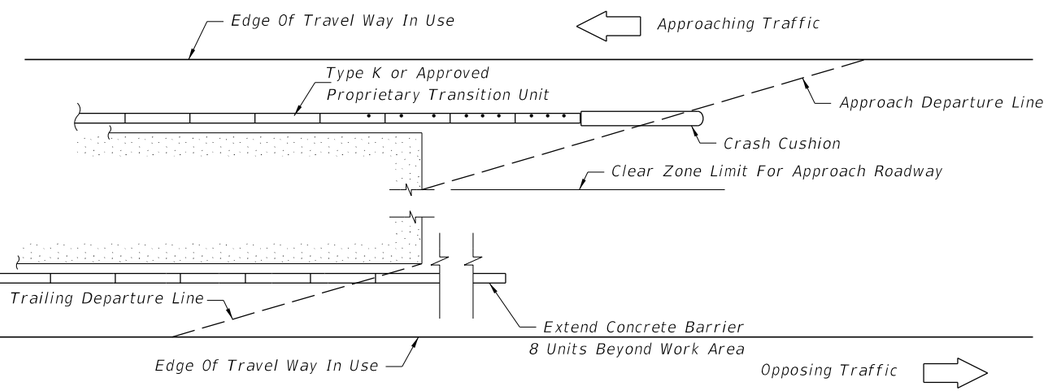
| LAST REVISION | REVISION | DESCRIPTION: | FDOT 2016 DESIGN STANDARDS | TEMPORARY CONCRETE BARRIER | INDEX NO. | SHEET NO. |
|---|---|---|---|---|---|---|
| 07/01/13 | | | | | 415 | 3 of 7 |



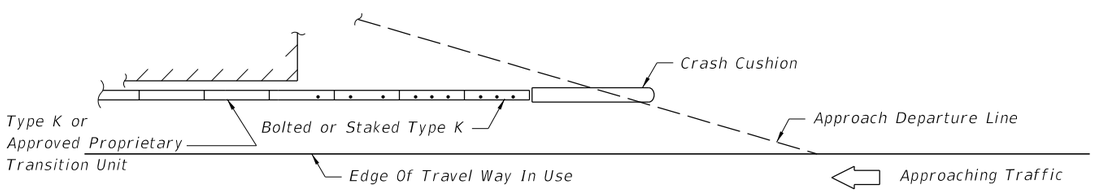

* Flare rates to be applied are 1:10 or flatter for speeds ≤ 45 mph and 1:15 or flatter for speeds ≥ 50 mph



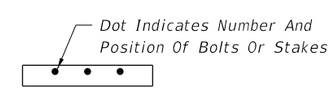

MEDIAN HAZARDS WITHIN CLEAR ZONES BOTH ROADWAYS




MEDIAN HAZARDS EXTENDS TO OR BEYOND CLEAR ZONES BOTH ROADWAYS



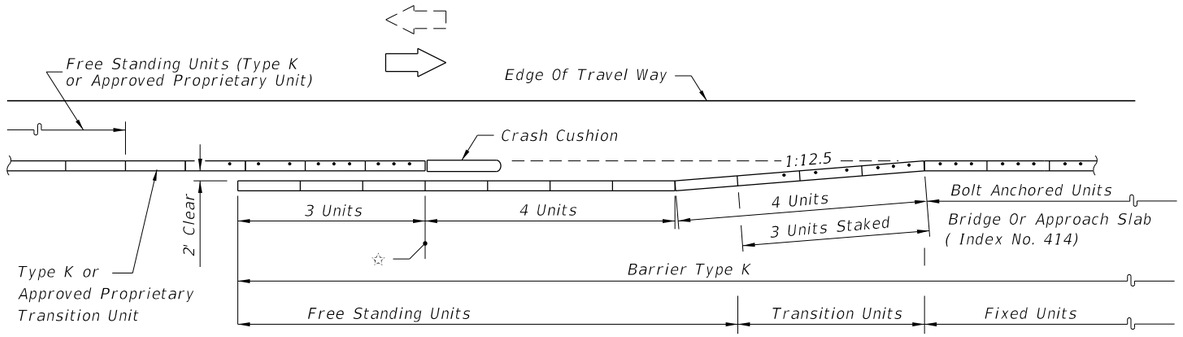

LEGEND



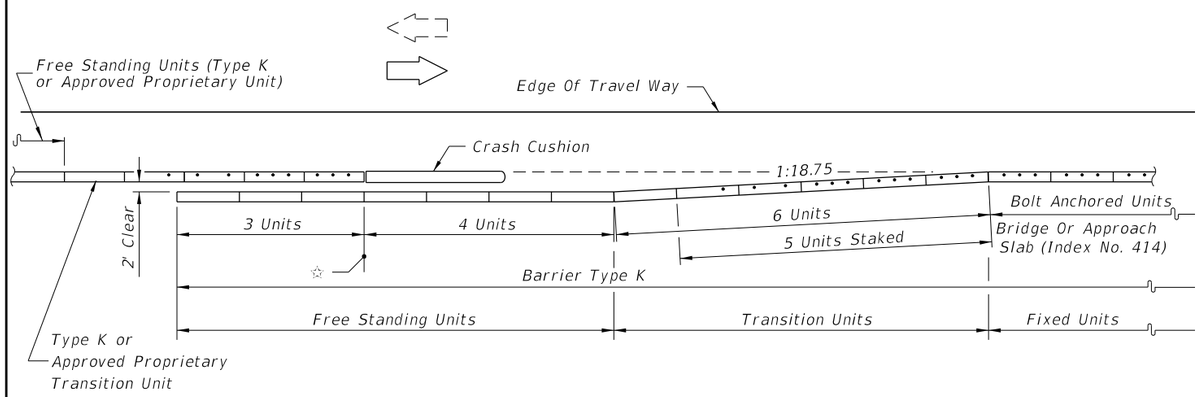

BARRIER END UNIT ANCHORAGE

6/8/2015 11:44:18 AM

| LAST REVISION | REVISION | DESCRIPTION: | | | INDEX NO. | SHEET NO. |
|---|---|---|---|---|---|---|
| 07/01/12 | | | FDOT 2016 DESIGN STANDARDS | TEMPORARY CONCRETE BARRIER | 415 | 4 of 7 |



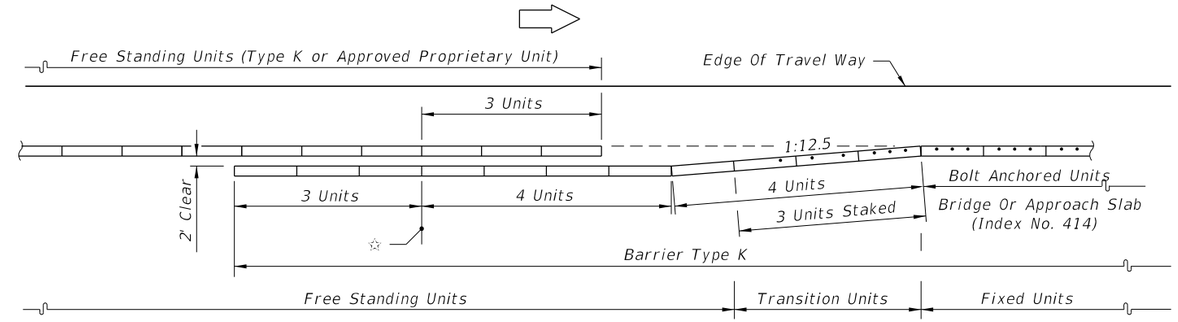

45 MPH OR LESS




50 MPH OR GREATER

☆ Overlap Reference Line

APPROACH SHOULDER BARRIER ON UNDIVIDED FACILITIES

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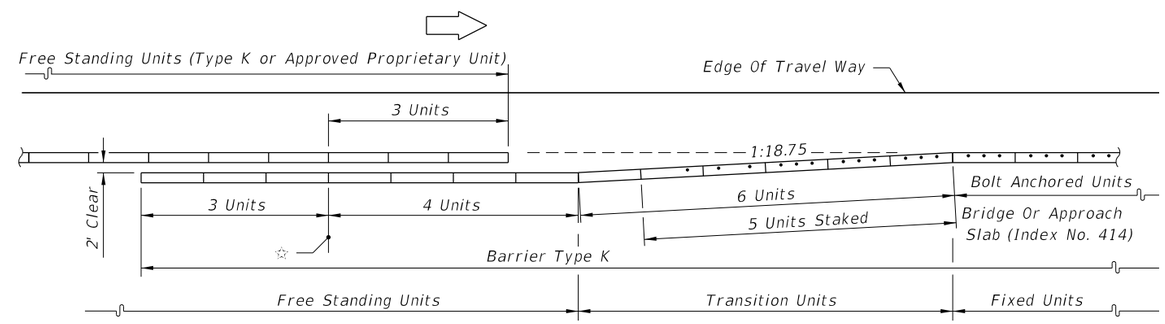
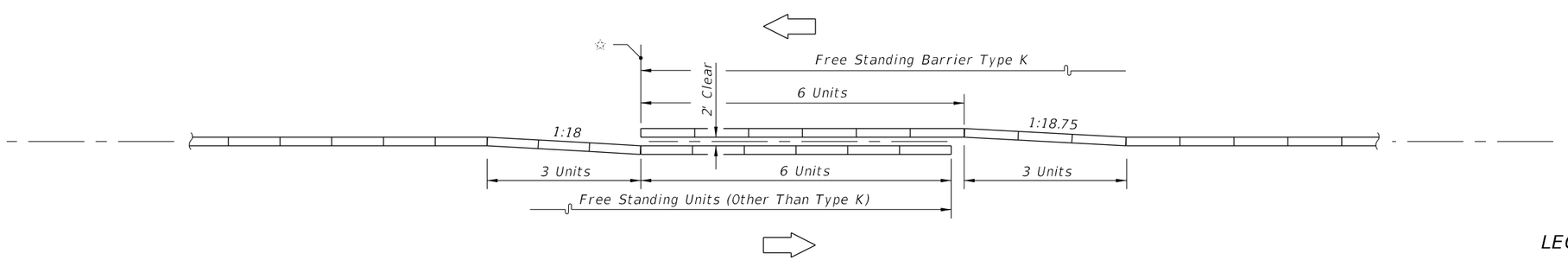



50 MPH OR GREATER

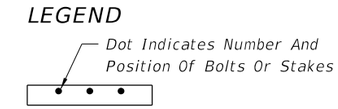
APPROACH SHOULDER BARRIER ON DIVIDED FACILITIES




INTERIOR MEDIAN BARRIER

CONTINUATION OF BARRIER • FROM OTHER TYPE BARRIERS TO BARRIER TYPE K

LEGEND

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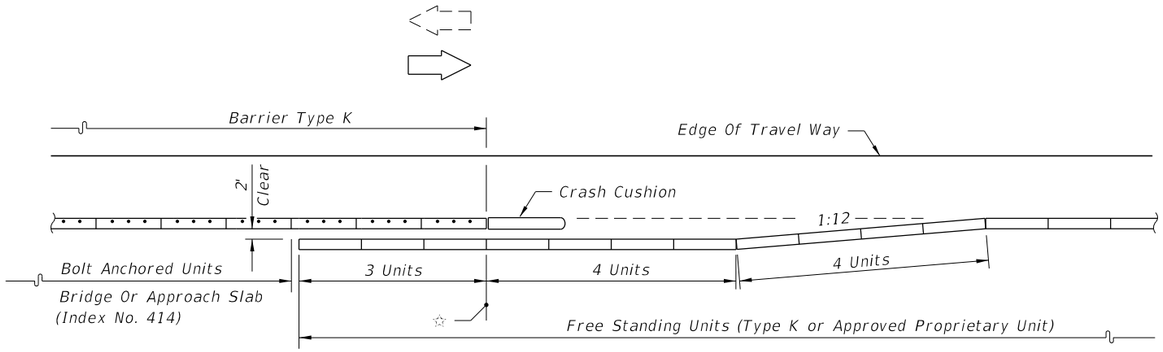
| LAST REVISION | REVISION | DESCRIPTION: | | | INDEX NO. | SHEET NO. |
|---|---|---|---|---|---|---|
| 07/01/12 | | | FDOT 2016 DESIGN STANDARDS | TEMPORARY CONCRETE BARRIER | 415 | 5 of 7 |

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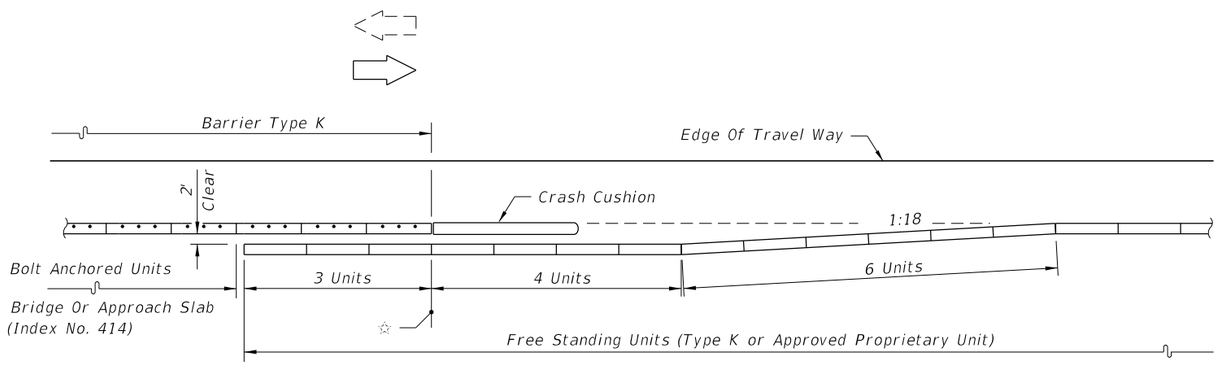
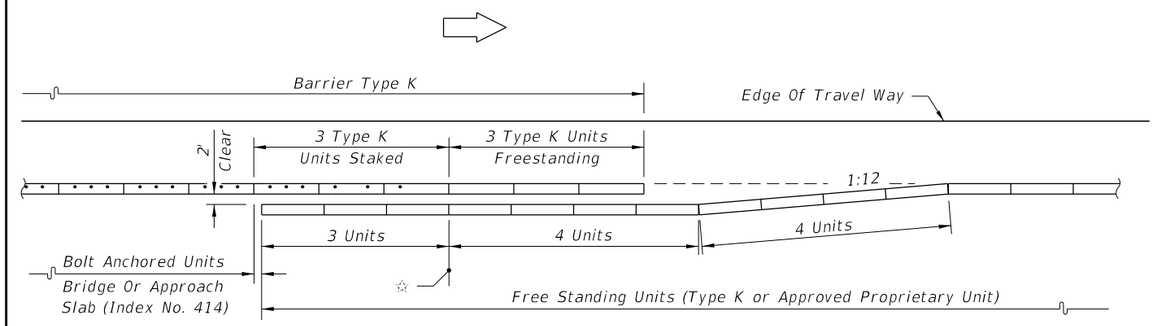



50 MPH OR GREATER

☆ Overlap Reference Line

DEPARTURE (TRAILING) SHOULDER BARRIER ON UNDIVIDED FACILITIES

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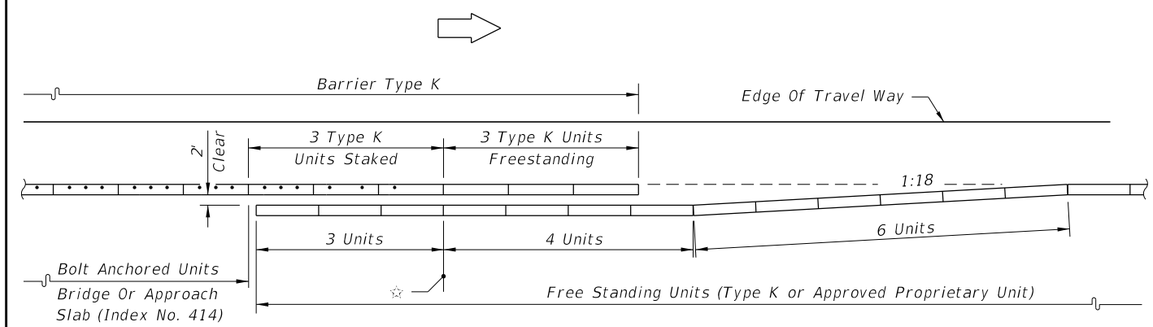
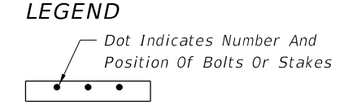



50 MPH OR GREATER

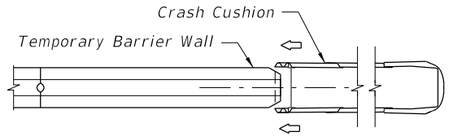
DEPARTURE (TRAILING) SHOULDER BARRIER ON DIVIDED FACILITIES

LEGEND

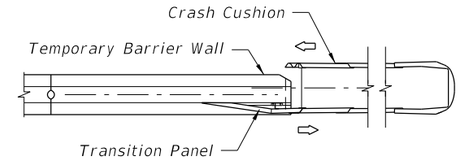



CONTINUATION OF BARRIER • FROM BARRIER TYPE K TO OTHER TYPE BARRIERS

BARRIER TYPE K ON BRIDGES AND APPROACH SLABS




UNIDIRECTIONAL -
SEPARATED TRAFFIC

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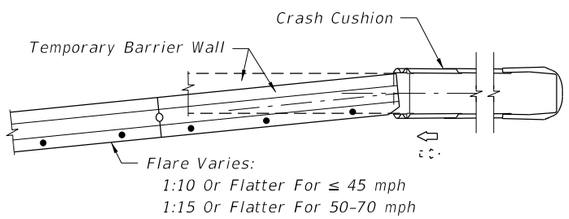
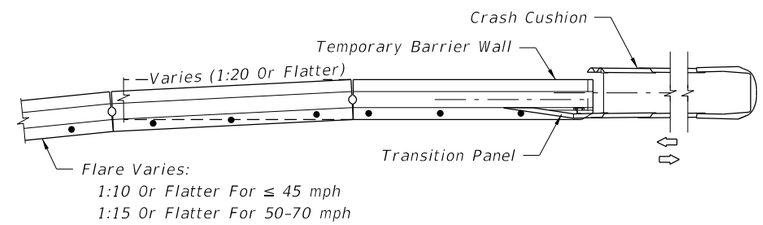



TWO-WAY TRAFFIC WITH CRASH CUSHION LOCATED OUTSIDE
OPPOSING LANE CLEAR ZONE OR ONE-WAY TRAFFIC




TWO-WAY TRAFFIC WITH CRASH CUSHION LOCATED
WITHIN OPPOSING LANE CLEAR ZONE

## SHOULDER - RIGHT OR LEFT (RIGHT SIDE SHOWN)

## WALL END TREATMENT WHEN SHIELDED BY A CRASH CUSHION

### NOTES FOR WALL END SHIELDING

1. Redirective crash cushions are the principal (standard) device to be used for shielding approach ends of temporary concrete barrier walls. The contractor has the option to construct any of the redirective crash cushions listed on the Approved Products List at "102 Temporary Crash Cushion", subject to the uses and limitations described on their respective drawings. The barrier wall four end unit abutting crash cushions must be anchored to a paved surface using anchors/stakes in accordance with Standard Index 414.

2. Temporary redirective crash cushions shall be installed in accordance with the manufacturer's specifications and recommendations. Temporary crash cushions can be either new or functionally sound used devices. Performance of intended function is the only condition for acceptance, whether the crash cushion is new, used, refurbished, purchased, leased, rented, on loan, shared between projects, or made up of mixed new and used components.

3. Temporary Crash Cushions shall not be bolted down on bridge superstructures that contain post-tensioned tendons within the concrete deck (top flange of concrete box girders) or on bridge superstructures consisting of longitudinally prestressed, transversely post-tensioned, solid or voided concrete slab units. Gating crash cushions shall be used where bolting is not allowed.

4. Assemble and install Crash Cushions according to the limitations noted on the Approved Products List (APL) webpage, the manufacturer's specifications, and the applicable crash cushion drawings posted on the APL.

5. Optional temporary redirective crash cushions are to be paid for per locations under the contract unit price for Crash Cushion (Redirective Option) (Temporary), LO.

6. A yellow Type I Object Marker shall be centered 3' in front of the crash cushion nose. Mounting hardware shall be in conformance with Section 993 of the Standard Specifications for Road and Bridge Construction.

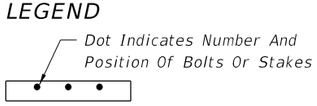
   As an option, the contractor may install reflective sheeting on the nose of the crash cushion. The sheeting to be used must be solid yellow, Type III or better and must be a product listed on the Department's Approved Products List (APL). The sheeting to be applied to the nose of the crash cushion shall be a minimum of 360 square inches with a minimum height of 15 inches.

7. Equipment, stockpile material, etc., shall not be placed behind the crash cushion.

8. When subjected to reverse direction hits, construct Transition Panels from Concrete Barrier Walls to Crash Cushions; for additional details refer to the applicable crash cushion drawings on the APL.

9. Galvanize metallic components to meet the requirements for Steel Guardrail, Section 967 of the Standard Specifications for Road and Bridge Construction.

### LEGEND




## SHIELDING WALL ENDS WITH REDIRECTIVE CRASH CUSHIONS (REDIRECTIVE OPTION)