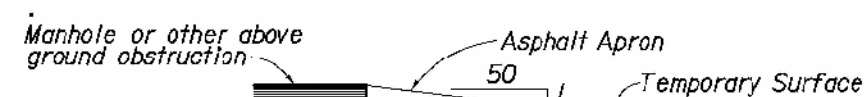


MANHOLES/CROSSWALKS/JOINTS

Manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than 1/8" shall have a temporary asphalt apron constructed as shown in the diagram below.

All transverse joints that have a difference in elevation of 1/8" or more shall have a temporary asphalt apron constructed as shown in the diagram below.



The apron is to be removed prior to constructing the next lift of asphalt. The cost of the temporary asphalt shall be included in the contract unit price for Maintenance of Traffic, LS.

TRUCK-MOUNTED ATTENUATORS

Truck-mounted attenuators (TMA) can be used for moving operations and short-term stationary operations. For moving operations, see Index Nos. 607 and 619. For short-term, stationary operations, see Part VI of the MUTCD.

REMOVING PAVEMENT MARKINGS

Existing pavement markings that conflict with temporary work zone delineation shall be removed by any method approved by the Engineer, where operations exceed one daylight period; however, painting over existing pavement markings will not be permitted. Full pavement width overlays of either a structural or friction course are a positive means to achieve obliteration.

SIGNALS

Existing traffic signal operations that require modification in order to carry out work zone traffic control shall be included in the TCP and be approved by the District Traffic Operations Engineer.

Maintain all existing actuated or traffic responsive mode signal operations for main and side street movements for the duration of the Contract and require restoration of any loss of detection within 12 hours. The contractor shall select only detection technology listed on the Department's Approved Products List (APL) and approved by the Engineer to restore detection capabilities. This plans should identify the intersections where Temporary Traffic Detection is required.

CHANNELIZING AND LIGHTING DEVICES

Channelizing and lighting devices for work zone traffic control shall be as prescribed in Part VI of the MUTCD, subject to supplemental revisions provided in the contract documents.

Primary work zone traffic control devices are shown on Sheet B for the purpose of ready identification. Approved devices are listed on the Department's Qualified Product List.

CHANNELIZING AND LIGHTING DEVICE CONSISTENCY

Barriades, vertical panels, cones, tubular markers and drums shall not be intermixed within either the lateral transition or within the tangent alignment.

WARNING LIGHTS

Warning lights shall be in accordance with Section 6F-78 of the MUTCD except for the application limitations stipulated below:

Flashing

Type A Low Intensity Flashing Warning Lights are to be mounted on barriades, drums, vertical panels or advance warning signs (except as noted below) and are intended to continually warn drivers that they are approaching or proceeding in a hazardous area. Flashing lights shall not be used to delineate the intended path of travel, and just placed with spacings that will form a continuous line to the drivers eye. The Type A light will be used to mark obstructions that are located adjacent to or in the intended travelway. Type A lights shall not be used in conjunction with the first advance warning sign nor the second such sign when used.

For post-mounted signs, Type B High Intensity Flashing Warning Lights shall be mounted on the first advanced warning sign and on the first and second advanced warning sign where two or more signs are used; this applies to all approaches to any work zone. The light shall be mounted on the channel post or on the upper edge of the sign nearest the traffic.

Steady-Burn

Type C Steady-Burn Lights are to be mounted on barriades, drums, concrete barrier walls or vertical panels and used in combination with those devices to delineate the travel way on lane closures, lane changes, diversion curves and other similar conditions. Steady burn lights are intended to be placed in a line to delineate the traveled way through and around obstructions in the transition, buffer, work and termination areas of the traffic control zone. Their intended purpose is not for warning drivers that they are approaching or proceeding through a hazardous area.

STANDARD ORANGE FLAG

For post-mounted signs a standard orange flag 18" x 18" (min.) shall be mounted on the first advanced warning sign and on the first and second advanced warning sign where two or more signs are used; this applies to all approaches to any work zone. The flag shall be mounted on the channel post or on the upper edge of the sign furthest from traffic.

PORTABLE CHANGEABLE (VARIABLE) MESSAGE SIGNS (PCMS)

The PCMS can be used for: (1) Supplemental standard signing in construction or maintenance work zones. (2) Reinforce static advance warning messages. (3) Provide motorists with updated guidance information.

PCMS should be placed approx. 500 to 800 feet in advance of the close zone centerline or 1.5 to 2 miles in advance of complex traffic control schemes which require new and/or unusual traffic maneuvers.

If PCMS are to be used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.

For additional information refer to the FDOT Plans Preparation Manual, Volume 1, Chapter 10.

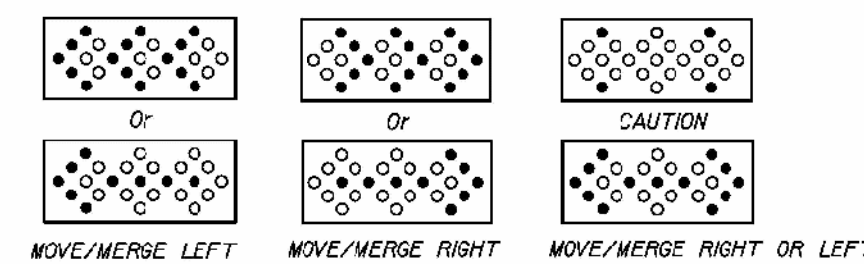
ADVANCE WARNING ARROW PANELS

An arrow panel in the arrow or chevron mode shall be used only for stationary or moving lane closures on multilane roadways.

For shoulder work, blocking the shoulder, for roadside work near the shoulder, or for temporarily closing one lane on a two-lane, two-way roadway, an arrow panel shall be used only in the caution mode.

A single arrow panel shall not be used to merge traffic laterally more than one lane. When arrow panels are used to close multiple lanes, a single panel shall be used at the merging taper for each closed lane.

When Advance Warning Arrow Panels are used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.

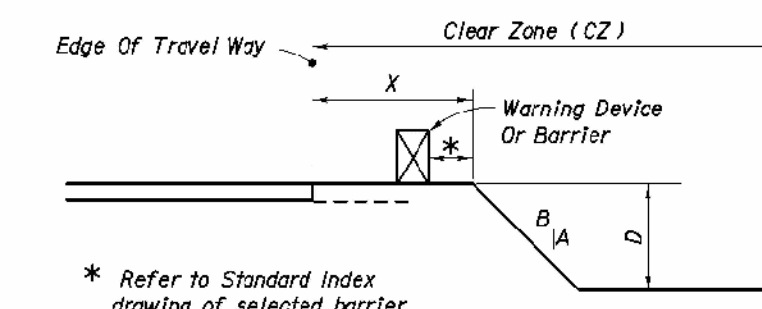


● Minimum Required Lamps
○ Additional Lamps Allowed

MODES

DROP-OFF CONDITION NOTES

- A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slopes (A:B) steeper than 1:4. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required. See chart.
- Distance X is to be the maximum practical under project conditions.
- Distance from the travel lane to the barrier or warning device should be maximum practical for project conditions.
- Any drop-off condition that is created and restored within the same work period will not be subject to the use of barriers; however, warning devices will be required.
- When permanent curb heights are $\geq 6"$, no warning device will be required. For curb heights $< 6"$, see chart.



* Refer to Standard Index drawing of selected barrier for required deflection space.

DROP-OFF PROTECTION REQUIREMENTS ALL SPEEDS NO CURB AND GUTTER		
X (ft.)	D (in.)	Device Required
0-12	>3	Barrier
12-CZ	>3 to ≤ 5	Warning Device
0-CZ	>5	Barrier

For Clear Zone widths, see index No. 600 sheet 2.

DROP-OFF NOTES

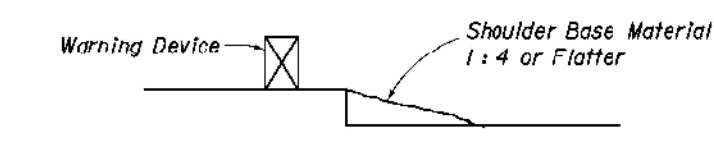
- These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.
- The following are defined as acceptable warning devices:
 - Vertical panel
 - Type I Or Type II barriades
 - Drum
 - Cone (where allowed)
 - Tubular marker (where allowed)
- Where a barrier is specified, any of the types below may be used in accordance with the applicable Index:

Index No.	Description
400	Temporary guardrail and end anchorage
402	Temporary low profile barrier
404	Type K temporary concrete barrier
405	Temporary concrete barrier

 For temporary water-filled barriers see the QPL.
- Warning device spacing shall be as shown in Table I.

Speed (mph)	Max. Distance Between Devices (ft)			
	Cones or Tubular Markers		Type I or Type II Barriades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

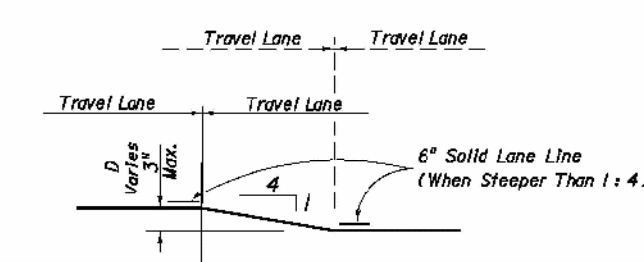
SHOULDER TREATMENT



NOTES

- Shoulder treatment may be used in lieu of barrier. Warning devices are required.
- Daily inspections shall be conducted to assure that no erosion, excessive slopes, rutting, or other adverse conditions exist. Any deficiencies shall be repaired immediately.
- Compensation for the placement and removal of the material required for the shoulder treatment shall be included in the cost for Maintenance of Traffic, LS. Use of shoulder treatment in lieu of a barrier is not eligible for VEGP consideration.

TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING



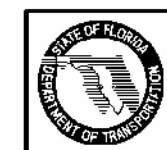
NOTES

- This treatment applies to resurfacing or milling operations between adjacent travel lanes.
- Whenever there is a difference in elevation between adjacent travel lanes, the WB-11 sign with "UNEVEN LANES" is required at intervals of 1/2 mile maximum.
- If C is 1/2" or less, no treatment is required.
- Treatment allowed only when D is 3" or less.
- If the slope is steeper than 1:4 (not to be steeper than 1:1), the RA-1 and MOT-1-04 signs shall be used as a supplement to the WB-11; this condition should never exceed 3 miles in length.

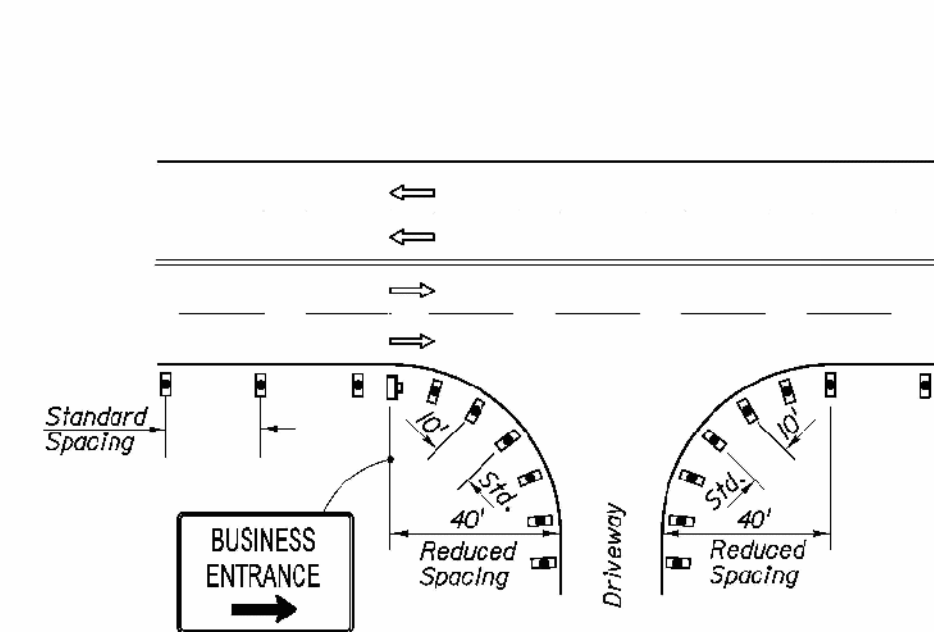
DROPOFFS IN WORK ZONES



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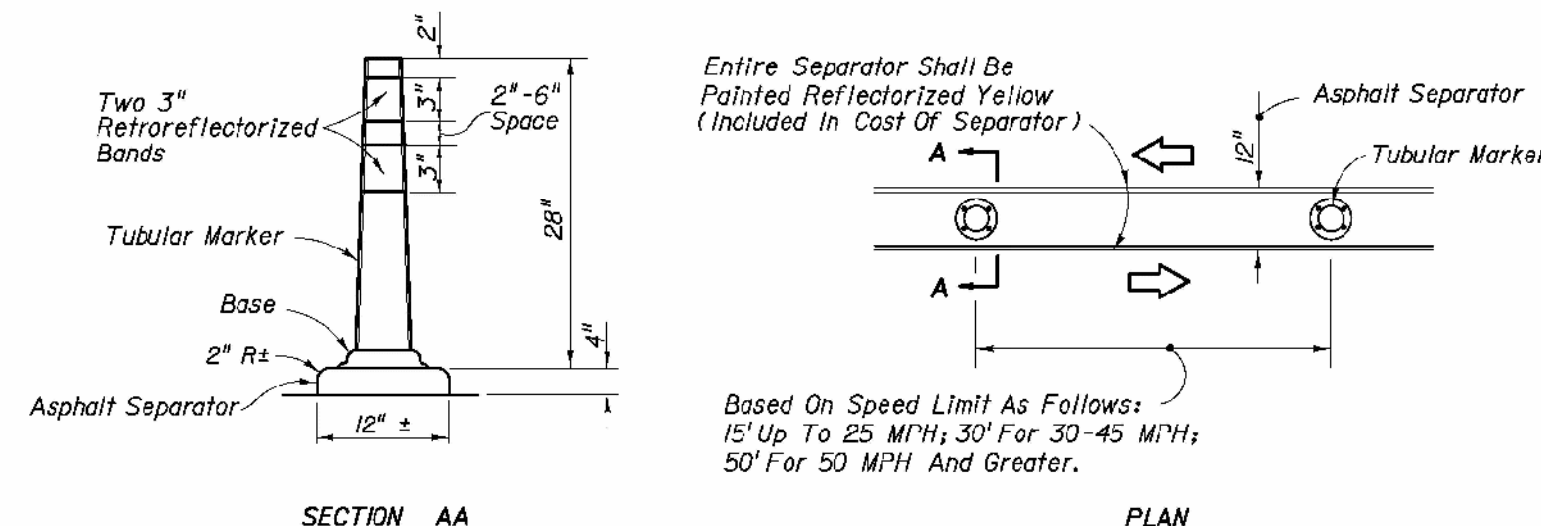


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- Sign height shall be 7' minimum. Sign offset from edge of travel way should be between 6' and 10' and relatively consistent through the project phase.
- Signs should show specific business names. Logos may be provided by business owners. BUSINESS ENTRANCE sign in accordance with Index 17355 may be used when approved by the Engineer.
- Place one business sign for each driveway entrance affected. When several businesses share a common driveway entrance, place one sign per common driveway entrance.
- Channelizing devices should be placed at a reduced spacing on each side of the driveway entrance as to not interfere with providing sight distances for the driveway user.

PLACEMENT OF BUSINESS ENTRANCE SIGNS AND CHANNELIZING DEVICES AT BUSINESS ENTRANCE

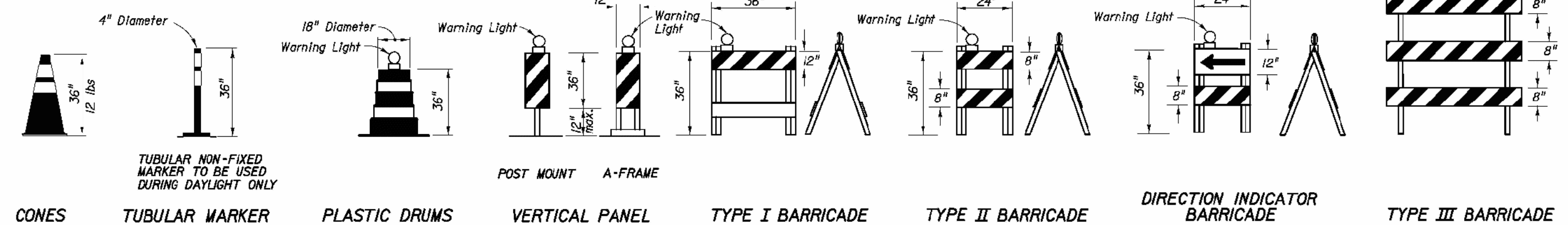


- The tubular marker is to be made of a flexible material or have a flexible joint at the base such that it will not cause damage to vehicles upon impact and will return to its original shape after being struck by a 5000 lb. vehicle at a velocity of 15 ft./sec.
- The tubular marker shall be orange with two white retroreflective bands.
- The tubular marker may be attached by bituminous adhesive or other methods approved by the Engineer.
- Retractable materials shall have a smooth sealed outer surface which will display the same approximate color day and night.
- 12" openings for drainage will be constructed in the separator island every 25' in areas with grades of 1% or less or every 50' in areas with grades over 1% as directed by the Engineer.
- Two-way Traffic sign(s) shall be repeated every 1/2 mile in each direction, throughout the limits where the temporary traffic separator is used.
- The Contractor has the option of using temporary traffic separators and tubular type warning devices from the qualified products list in lieu of the temporary asphalt separator and tubular warning device detailed on this sheet.
- Temporary traffic separator shall be paid for under the contract unit price for Maintenance of Traffic, LS, and will include all materials and work necessary to construct, maintain, and remove the temporary traffic separator. Any damage to existing pavement caused by the removal of temporary traffic separator shall be satisfactorily repaired and the cost of such repairs are to be included in the cost of Maintenance of Traffic, LS.

TEMPORARY ASPHALT SEPARATOR



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CHANNELIZING AND LIGHTING DEVICE NOTES

- Only approved traffic control devices included on the Qualified Products List (QPL) may be used.
- The FDOT approval number shall be engraved on the device at a convenient and readily visible location. Where engraving is not practical a water-resistant type label may be used.
- The details shown on this sheet are for the following purposes: (a) For ease of identification and (b) To provide information that supplements or supersedes that provided by the MUTCD.
- The Type III Barricade shall have a unit length of 6'-0" only. When barricades of greater lengths are required those lengths shall be in multiples of the 6'-0" unit. Signs used in conjunction with Type III Barricades may be mounted on or above the barricade. These signs should not cover more than 50 percent of the top two rails or 33 percent of the total area of the three rails.
- During hours of darkness, warning lights shall be used on drums, vertical panels, Type I, Type II, Type III and direction indicator barricades in accordance with Warning Lights in Index No. 600.
- Bellast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface.
- The direction indicator barricade may be used in tapered transitions where specific directional guidance to drivers is necessary. If used, direction indicator barricades shall be used in series to direct the driver through the transition and into the intended travel lane.
- The splicing of sheeting is not permitted on either channelizing devices or MOT signs.
- For rails less than 3'-0" long, 4" stripes shall be used.
- Cones shall:
 - Be used only in active work zones where workers are present.
 - Not exceed 2 miles in length of use at any one time.
 - Be reflectorized as per the MUTCD with Department approved reflective collars when used at night.

IDENTIFICATIONS - CHANNELIZING AND LIGHTING DEVICES



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NOTE: INFORMATION ON THIS SHEET IS FROM FDOT REFERENCE DOCUMENTATION FOR USE ON PROJECTS WITHIN FDOT RIGHT-OF-WAY.

Thomas G. Walker, P.E.
Florida PE 31462

Date:

DRWG. NO: C-706

SHT. 53 OF 55

DRAWING SIZE 24" x 36" - USE GRAPHIC SCALE OTHERWISE.

DESIGNED BY: NO. DATE
PROJECT MANAGER: LAURA S. ANDREWS, PE
DRAWN BY: ABE
FILE NAME: LBK_WTR_C-706.DWG
DATE: 10/17/08
ACCOUNT: ENGINEERING VISIONS, INC. PARTNERSHIP
FL COAH 26755
4650 W. BOULEVARD, SUITE 210
MOKULAU, CALIFORNIA 94024
PH: (941) 412-9187 FAX: (941) 412-9273

UPSIZE POTABLE WATER TRANSMISSION MAIN
TOWN OF LONGBOAT KEY,
SARASOTA COUNTY, FLORIDA

FDOT DETAILS 600 PG 8-11