

**STIPULATION OF PARTIES**  
**FOR THE CLOSURE OF NW 28<sup>th</sup> STREET, CROSSING #272502L,**  
**AND THE OPENING OF JEFFERY STREET**  
**PUBLIC RAILROAD-HIGHWAY GRADE CROSSING #TBD,**  
**CITY OF BOCA RATON, FLORIDA**

The City of Boca Raton ("CITY"), Florida East Coast Railway L.L.C. ("RAILROAD") and the Florida Department of Transportation ("DEPARTMENT"), each individually referred to as a "Party" or collectively referred to as the "Parties", enter this Stipulation of Parties pursuant to Rule 14-57.012, Florida Administrative Code, by and through their undersigned representatives and agree to the following conditions:

1. The CITY has filed applications with the DEPARTMENT for the conditional closure of a public railroad-highway grade crossing located at NW 28th Street, FDOT Crossing Number 272502L, contingent upon the opening of a new public railroad-highway grade crossing located at Jeffery Street in the City of Boca Raton, Florida, pursuant to Section 335.141(1), Florida Statutes, and Rule 14-57.012, Florida Administrative Code.
2. The CITY, at its expense, will provide all necessary labor and materials to install and maintain a public railroad-highway grade crossing at Jeffery Street (the "Jeffery Street Crossing") in compliance with the DEPARTMENT's Standard Plans, Index 830-T01, attached as EXHIBIT "A." The Jeffery Street Crossing is further described on the map, attached as EXHIBIT "B."
3. The CITY, at its expense, will provide all necessary labor and materials to install and maintain at the Jeffery Street Crossing automated railroad grade crossing warning devices, including Type III, Class V flashing lights and gates, in accordance with the DEPARTMENT's Standard Plans, Index 509-070 attached hereto as EXHIBIT "C."
4. The CITY, at its expense, will provide all necessary labor and materials to install and maintain at the Jeffery Street Crossing traffic control devices (both roadway and pedestrian) for highway-

railroad at-grade crossings, including but not limited to signs, pavement markings, flashing light signals, and automatic gates, in compliance with DEPARTMENT's Standard Plans, Index 711-001 attached hereto as EXHIBIT "D."

5. The CITY's maintenance obligations shall be limited to the traffic control devices, warning systems, and other related infrastructure specified in Sections 2 through 4, and Sections 8 and 9 of this Stipulation. Any responsibilities beyond those expressly assigned to the CITY in these sections shall rest exclusively with the RAILROAD.
6. To offset the proposed Jeffery Street Crossing opening, the CITY has conditionally applied for the closure of a public highway-rail grade crossing located at NW 28th Street, FDOT Crossing Number 272502L (the "NW 28<sup>th</sup> Street Crossing"). The NW 28th Street Crossing is further described on the map, attached as EXHIBIT "E."
7. The Parties agree that the closure of the NW 28th Street Crossing is contingent upon the issuance of all necessary permits for the construction and operation of the Jeffery Street Crossing.
8. The proposed Jeffery Street Crossing will be a public at-grade crossing with 2-quad flashing LED lights and gates. All signage, pavement markings, and safety measures will be installed per the 2009 MUTCD and the Florida Department of Transportation Standard Plans FY 2024-25.
9. The proposed Jeffery Street Crossing will have active warning devices, signage, and pavement markings installed in conformance to FDOT and MUTCD requirements.

10. Prior to the start of the NW 28th Street Crossing closure, the CITY, at its expense, shall provide road closure notification and maintenance of traffic and furnish necessary materials and equipment to remove the rail crossing. The CITY, at its expense, shall erect on each side of the crossing, signs, and object markers as identified in the DEPARTMENT'S Standard Plans Index 102-600, attached as (EXHIBIT "F"). The work zone signs, and object markers will be erected before the work. The CITY, at its expense, will remove all evidence of the track crossing and restore the right-of-way for the roadway.
11. The CITY, at its expense, will remove all crossing warning signs, equipment, and all crossing debris. Following completion of the closure, the DEPARTMENT will perform all necessary inspections required under Fla. Stat. § 335.141 Florida Statutes, including a quality assurance inspection of the site to ensure compliance with applicable safety standards for the closure of the NW 28th Street Crossing and for compliance with the requirements outlined in this Stipulation of Parties.
12. The CITY shall notify the RAILROAD a minimum of seventy-two (72) hours prior to the start of any work adjacent to the crossings referenced herein, within the RAILROAD property, or as required by the approved permits, except for emergency work, for which immediate notification to the RAILROAD will be provided.
13. All work by the CITY will be consistent with the Manual of Uniform Traffic Control Devices (MUTCD); Federal Railroad Administration (FRA) Rules and Regulations; American Association of State Highway and Transportation Officials (AASHTO) Policy; the DEPARTMENT's Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways (Florida's Green Book); and CITY requirements, all incorporated as fully set forth herein.



14. The RAILROAD will update the existing U.S. DOT Crossing Inventory Form (OMB 2130-0017) (attached and incorporated herein as EXHIBIT "G") for the addition of the Jeffery Street Crossing and complete the U.S. DOT Crossing Inventory Form (OMB 2130-0017) for the closure of the NW 28th Street Crossing. The completed forms will be submitted to the DEPARTMENT and the Federal Railroad Administration (FRA) for inventory data entry upon completion of the opening and closures.
15. This Stipulation of Parties has been executed by all parties having an interest in this matter. All Parties waive hearing rights provided by Chapter 120, Florida Statutes, for the closure of the NW 28th Street and opening of the Jeffery Street Crossing with this Stipulation of Parties; provided, however, that the CITY's waiver of its hearing rights is expressly contingent upon the issuance of all necessary permits for the construction and operation of the Jeffery Street Crossing. If the conditions set forth in this Stipulation are not satisfied, the CITY expressly reserves its hearing rights under Chapter 120, Florida Statutes.
16. Upon compliance with the terms of this Stipulation of Parties, the CITY, RAILROAD, and DEPARTMENT agree that the NW 28th Street Crossing hereafter in fact shall be a closed railroad-highway grade crossing.
17. The DEPARTMENT's approval of the opening of the proposed Jeffery Street Crossing is contingent on the closure of the NW 28th Street Crossing. If the NW 28th Street Crossing is not closed prior to or at the time of the opening of the Jeffery Street Crossing, the DEPARTMENT's approval of the Jeffery Street Crossing is voided, and the NW 28th Street Crossing must be immediately closed to vehicle traffic.
18. The terms of this Stipulation of Parties may not be changed, waived, discharged, or terminated orally, but only by an instrument or instruments in writing, signed by RAILROAD, CITY, and DEPARTMENT.
19. This Stipulation of Parties is governed by and shall be interpreted and construed in accordance with the laws of the State of Florida. Each Party will bear its own attorney's fees and costs in



any disputes, controversies, claims, and/or proceedings that may arise from this Stipulation of Parties.

20. Any failure of any Party to insist upon the strict performance of any terms or provisions of this Stipulation of Parties is not deemed to be a waiver of the terms of this Stipulation.

21. In the event of any dispute, controversy, or claim arising out of or relating to this Stipulation, the Parties agree to first attempt to resolve the matter through good-faith negotiations.

22. As authorized by Section 335.141, Florida Statutes, and Rule Chapter 14-57, Florida Administrative Code, the DEPARTMENT permits the opening of the Jeffery Street Crossing and the closure of the NW 28th Street Crossing, as evidenced by this Stipulation of Parties, provided all conditions are met and completed within 60 months of the execution of this Stipulation.

23. The CITY and RAILROAD agree that the agreement authorized by Resolution No. 299-1978 on November 28, 1978 (the "1978 Crossing Agreement"), governing the NW 28th Street Crossing is hereby terminated in its entirety upon the closure of the NW 28th Street Crossing as set forth in this Stipulation of Parties. Upon termination, all rights, obligations, liabilities, and responsibilities of the CITY and RAILROAD under the 1978 Crossing Agreement shall be extinguished and of no further force or effect. CITY and RAILROAD acknowledge that Palm Beach County's role in the 1978 Crossing Agreement was limited to initial design, planning, and installation obligations, which were fully satisfied upon the opening of the NW 28th Street Crossing. The CITY shall notify Palm Beach County of the closure of NW 28th Street Crossing and the termination of the 1978 Crossing Agreement. Nothing herein is intended to affect any other crossing agreements authorized by Resolution No. 299-1978, including those relating to the NW 20th Street or NW 40th Street (Spanish River Boulevard) crossings.

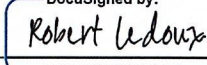
24. This Stipulation of Parties is entered into pursuant to Rule 14-57.012, Florida Administrative Code. By executing this agreement, the Parties acknowledge that this Stipulation of Parties serves as the final and binding agreement for the closure of the NW 28th Street Crossing and

the opening of the Jeffery Street Crossing, as provided under Rule 14-57.012(2), FAC. This Stipulation satisfies all procedural and substantive requirements for the opening and closure of public railroad-highway grade crossings under Florida law and represents a voluntary agreement by all Parties having an interest in the matter, as required by Rule 14-57.010(8), FAC.

25. This Stipulation of Parties may be executed in any number of counterparts, each of which shall be deemed an original, but all of which shall constitute the same instrument. Facsimile, .pdf, and other electronic signatures to this Stipulation of Parties shall have the same effect as original signatures.

### SIGNATURE PAGE

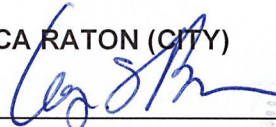
#### Florida East Coast Railway L.L.C. (RAILROAD)

By:   
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Authorized Signature

Date: 04/03/2025 | 10:17 AM CDT

#### CITY OF BOCA RATON (CITY)

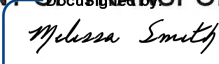
By: 

Authorized Signature

Date: 04/22/2025

#### STATE OF FLORIDA

#### DEPARTMENT OF TRANSPORTATION (DEPARTMENT)

By:   
3AFA5AB76A4A467...

Chief of Modal Development

Date: 05/21/2025 | 8:40 AM EDT

**LEGAL REVIEW**

DocuSigned by:

*Austin Hensel*

By: \_\_\_\_\_  
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Attorney, FDOT Central Office

05/22/2025 | 12:52 PM EDT

Date: \_\_\_\_\_



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EXHIBIT A

CROSSING SURFACES	
Type	Definition
C	Concrete
R	Rubber
RA	Rubber/Asphalt
TA	Timber/Asphalt

STOP ZONE FOR RUBBER CROSSING	
Design Speed (mph)	Zone Length (Distance From Stop)
45 Or Less	250'
50 - 55	350'
60 - 65	500'
70	600'

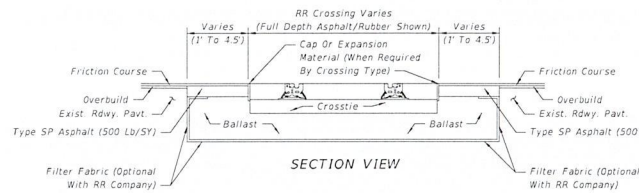
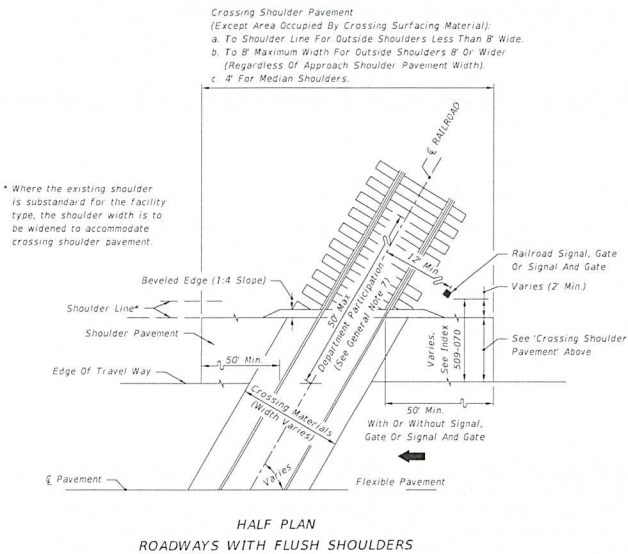
- Notes:
1. Type R Crossings are NOT to be used for multiple track crossings within zones for an existing or scheduled future vehicular stop. Zone lengths are charted above.
  2. Single track Type R Crossings within the zones on the chart may be used unless engineering or safety considerations dictate otherwise.

- GENERAL NOTES:
1. The Railroad Company will furnish and install all track bed (ballast), crossties, rails, crossing surface panels and accessory components. All pavement material, including that through the crossing, will be furnished and installed by the Department or its Contractor, unless negotiated otherwise.
  2. When a railroad grade crossing is located within the limits of a highway construction project, a transition pavement will be maintained at the approaches of the crossing to reduce vehicular impacts to the crossing. The transition pavement will be maintained as appropriate to protect the crossing from low clearance vehicles and vehicular impacts until the construction project is completed and the final highway surface is constructed.
  3. The Central Rail Office will maintain a list of currently used Railroad Crossing Products and will periodically distribute the current list to the District Offices as the list is updated.
  4. The Railroad Company shall submit engineering drawings for the proposed crossing surface type to the Construction Project Engineer and/or the District Rail Office for concurrence along with the List of Railroad Crossing Products. The approved engineering drawings of the crossing surface type shall be made a part of the installation agreement.
  5. Sidewalks shall be constructed through the crossing between approach sidewalks of the crossing. Sidewalks shall be constructed with appropriate material to allow unobstructed travel through the crossing in accordance with ADA requirements.
  6. Install pavement in accordance with the Specifications.
  7. The Department will participate in crossing work, that requires adjustments to rail outside of the crossing, no more than 50 feet from the edge of the travel way.

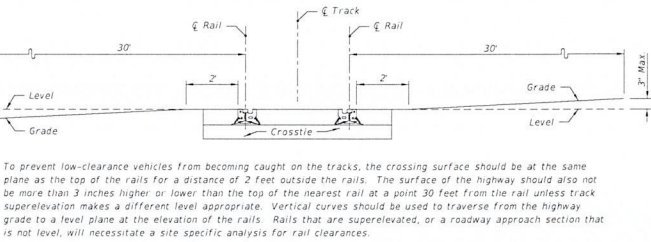
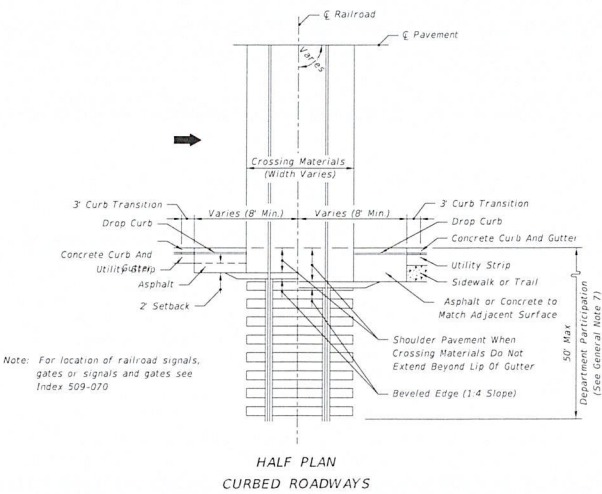
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TYPICAL CROSSING MATERIAL REPLACEMENT AT RR CROSSINGS

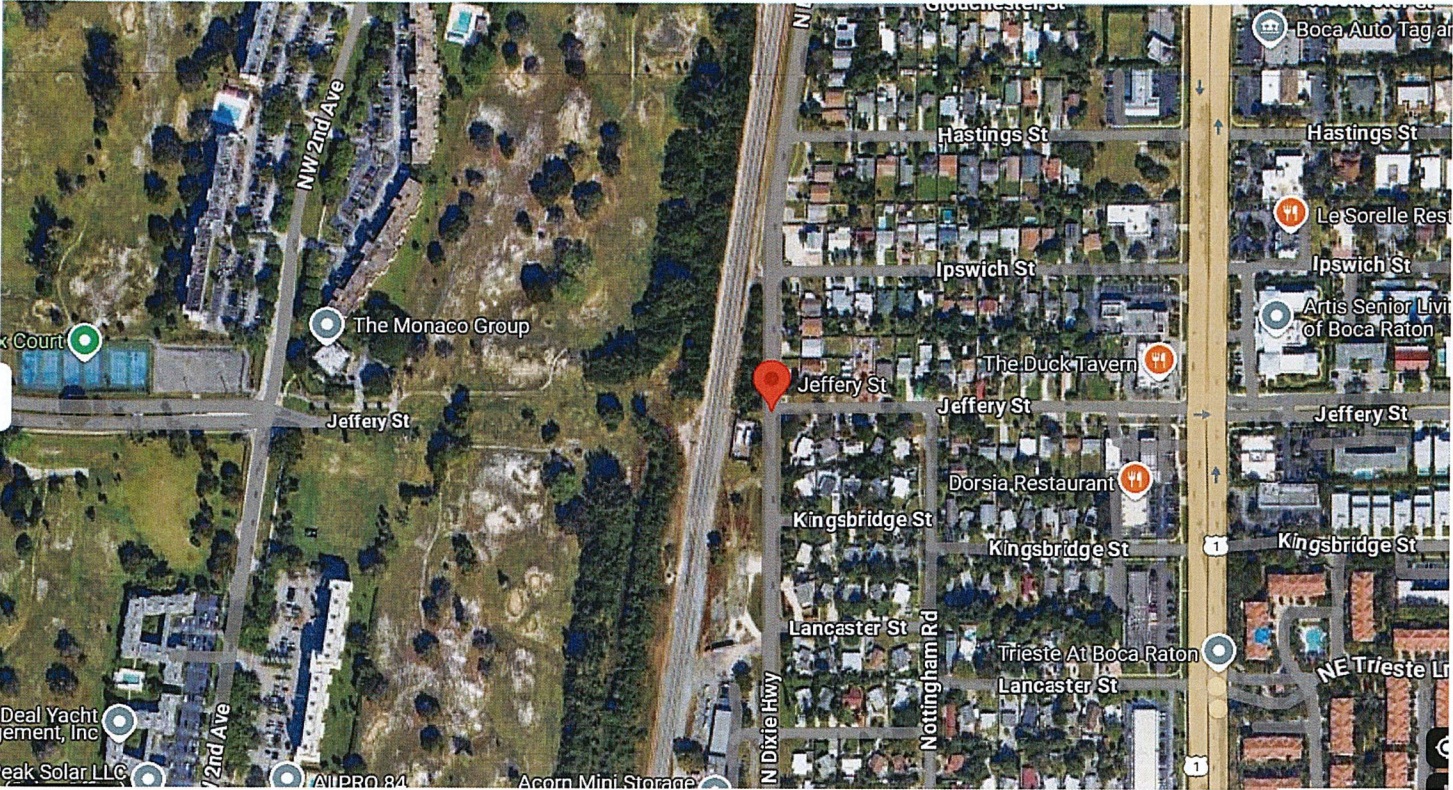


VERTICAL ROADWAY ALIGNMENT THROUGH A RAILROAD CROSSING

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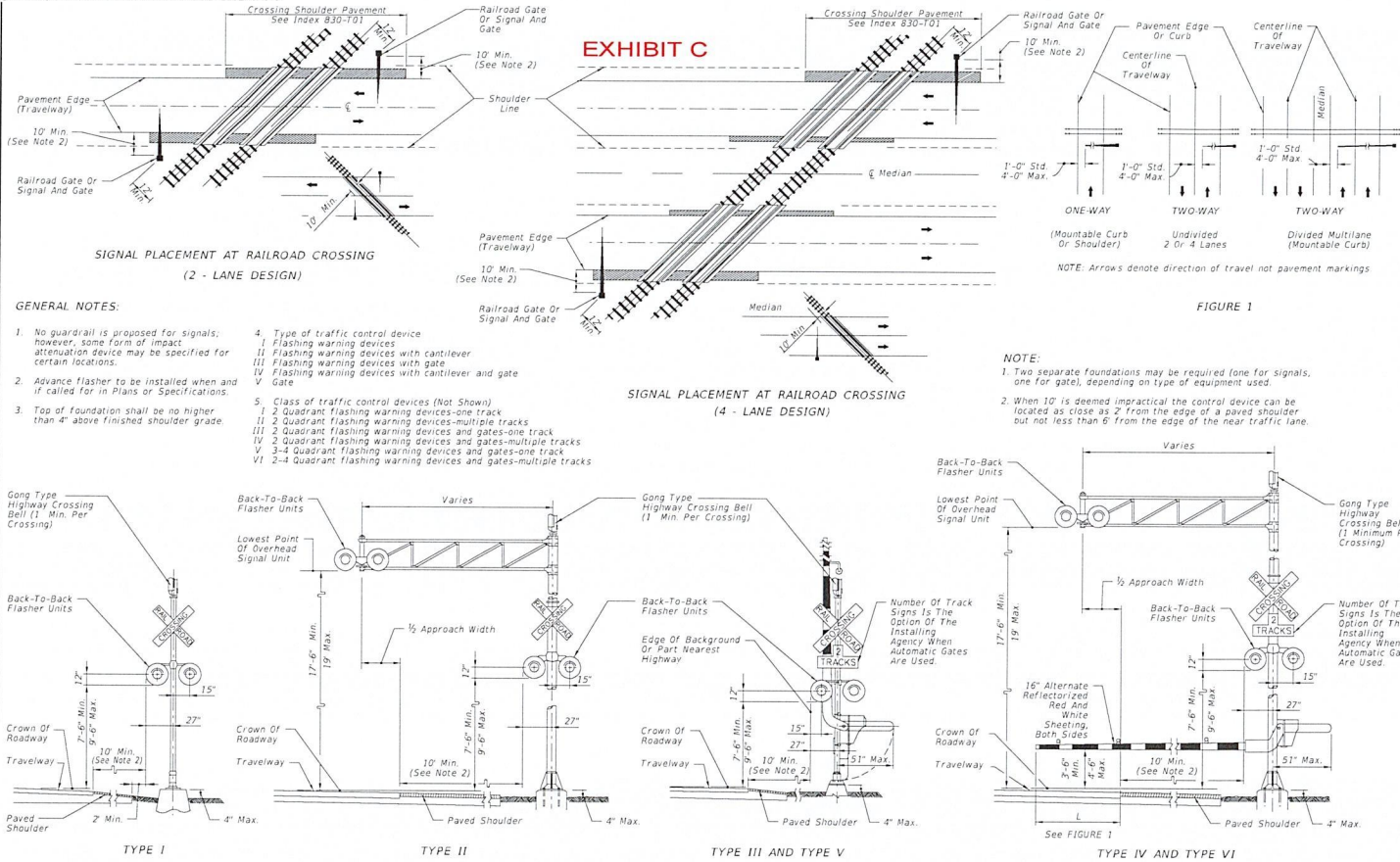


EXHIBIT B





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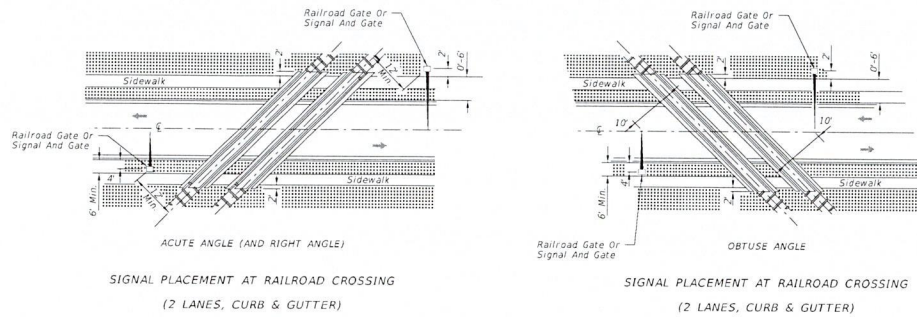
FY 2023-24  
STANDARD PLANS

RAILROAD GRADE CROSSING  
TRAFFIC CONTROL DEVICES

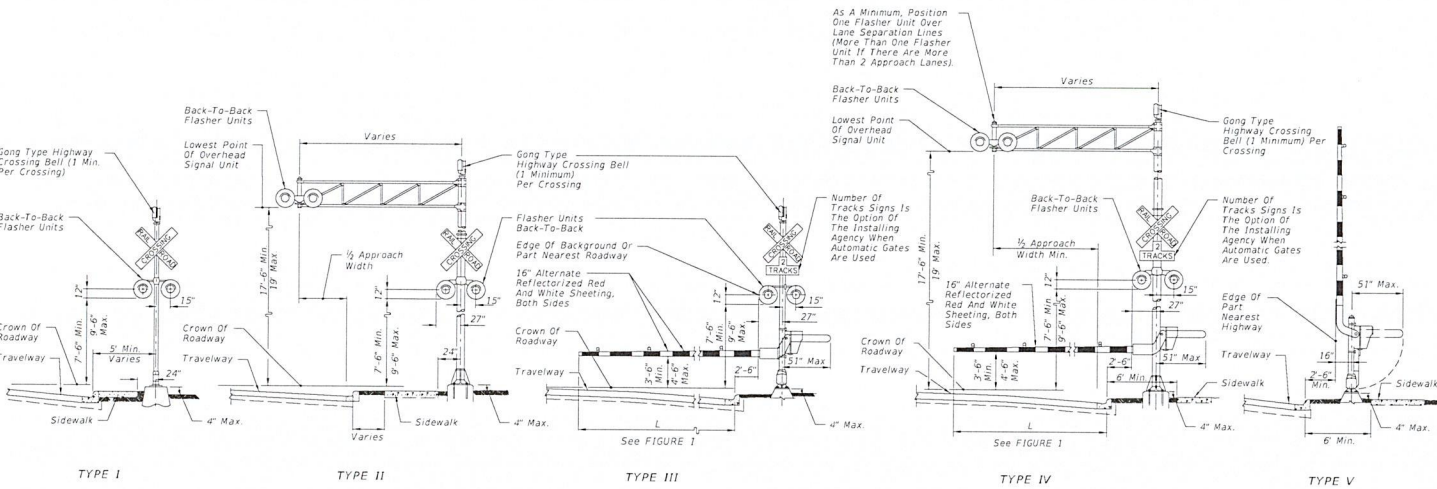
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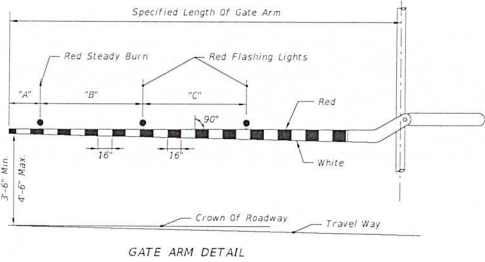
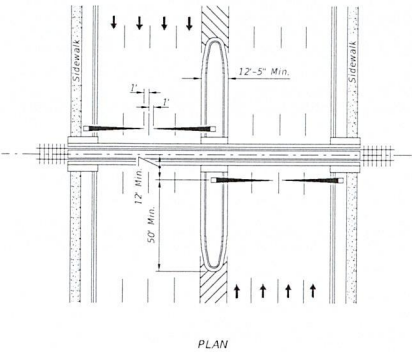
- NOTES:**
- 1. The location of flashing warning devices and stop lines shall be established based on future (or present) installation of gate with appropriate track clearances.
  - 2. Where plans call for railroad traffic control devices to be installed in curbed medians, the minimum median width shall be 12'-0".
  - 3. Location of railroad traffic control device is based on the distance available between face of curb & sidewalk, 0' to 6' - Locate device outside sidewalk. Over 6' - Locate device between face of curb and sidewalk.
  - 4. Stop line to be perpendicular to edge of roadway, approx. 15' from nearest rail; or 8' from and parallel to gate when present.
  - 5. When a cantilevered-arm flashing warning device is used, the minimum vertical clearance shall be 17'-6" from above the Crown of Roadway to the Lowest Point of the Overhead Signal Unit.



TRAFFIC CONTROL DEVICES FOR CURBED ROADWAY

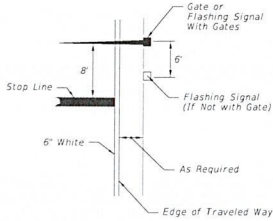
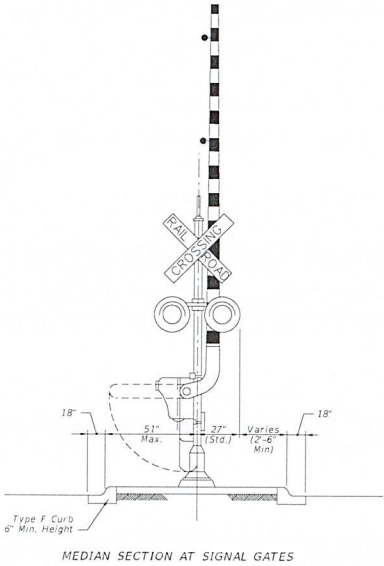
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RAILROAD GATE ARM LIGHT SPACING			
Specified Length Of Gate Arm	Dimension "A"	Dimension "B"	Dimension "C"
14 Ft.	6"	36"	5'
15 Ft.	18"	36"	5'
16-17 Ft.	24"	36"	5'
18-19 Ft.	28"	41"	5'
20-23 Ft.	28"	4"	5'
24-28 Ft.	28"	5'	5'
29-31 Ft.	36"	6'	6'
32-34 Ft.	36"	7'	7'
35-37 Ft.	36"	9'	9'
38 And Over	36"	10'	10'

NOTE:  
For additional information see the "Manual On Uniform Traffic Control Devices", Part 8, The "Traffic Control Handbook", Part VIII, and AASHTO "A Policy On Geometric Design Of Streets And Highways".



MEDIAN SIGNAL GATES FOR MULTILANE UNDIVIDED URBAN SECTIONS  
(Three or More Driving Lanes in one Direction, 45 mph or less)

RELATIVE LOCATION OF CROSSING TRAFFIC CONTROL DEVICES



FY 2023-24  
STANDARD PLANS

RAILROAD GRADE CROSSING  
TRAFFIC CONTROL DEVICES

INDEX  
509-070

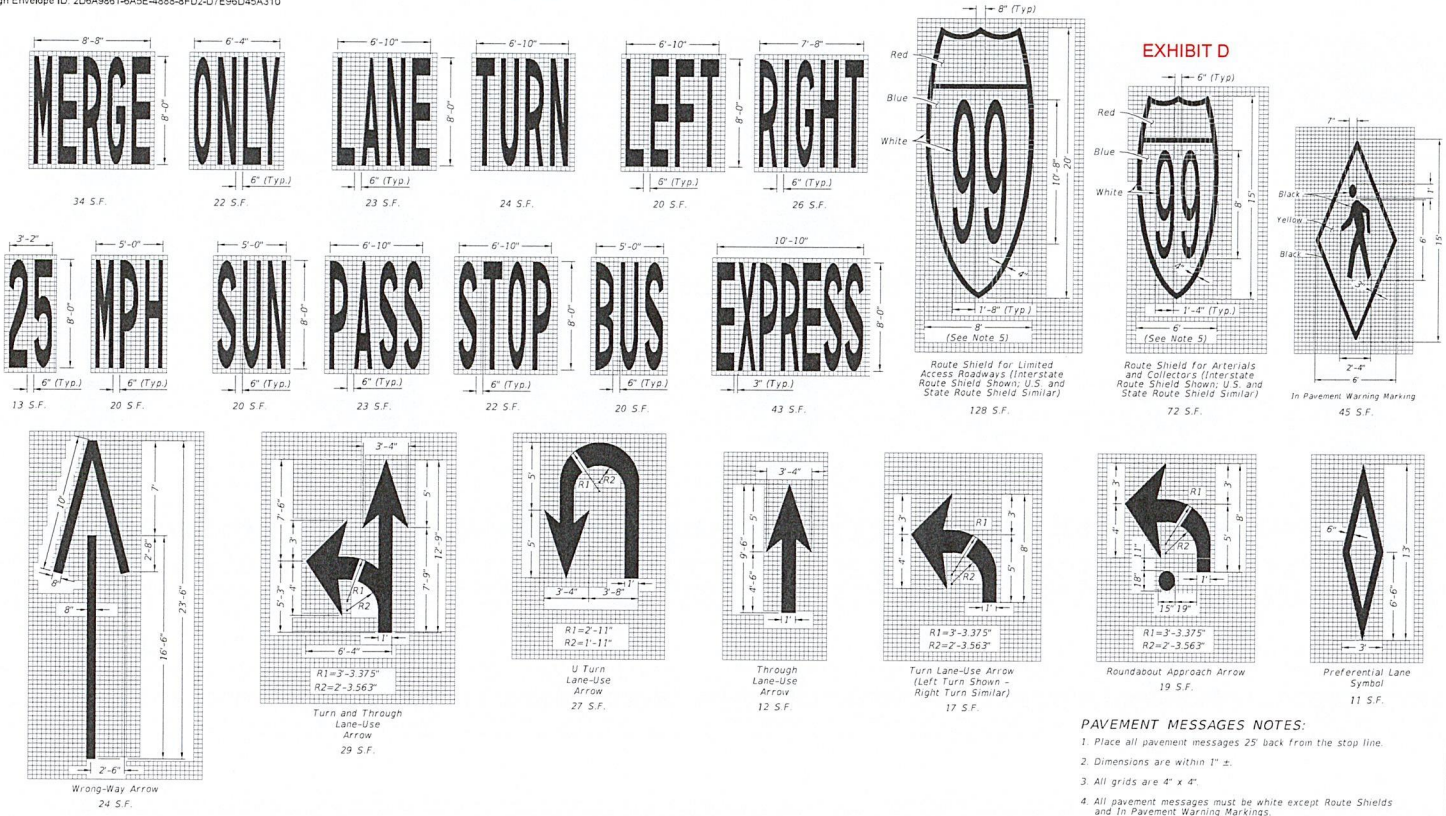
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REVISION  
02/05/21

DESCRIPTION:



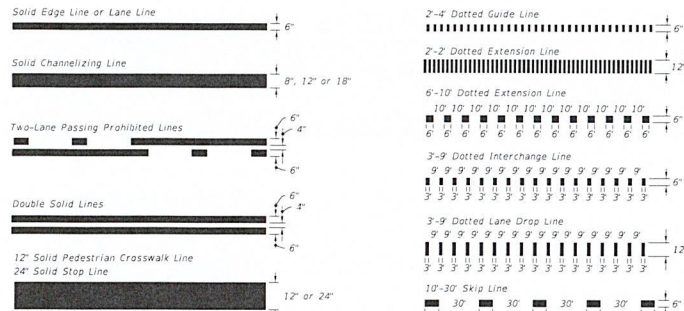
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- PAVEMENT MESSAGES NOTES:**
- 1. Place all pavement messages 25' back from the stop line.
  - 2. Dimensions are within 1" ±.
  - 3. All grids are 4" x 4".
  - 4. All pavement messages must be white except Route Shields and In Pavement Warning Markings.
  - 5. Increase width of route shield for routes with three digits.

PAVEMENT MESSAGE AND ARROW DETAILS

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### PAVEMENT MARKING LINES

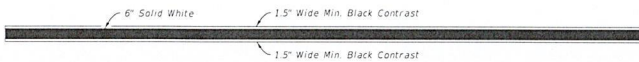


= 10'-30' SKIP LINE WITH CONTRAST MARKINGS



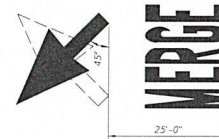
**DOTTED LINE WITH ALTERNATING CONTRAST MARKINGS**  
(3" & Dotted Line Shown, Other Dotted Lines Similar)

(3'-9' Dotted Line Shown, Other Dotted Lines Similar)

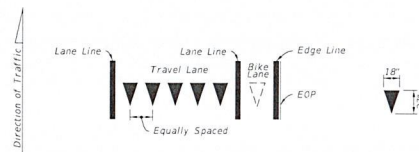


LONGITUDINAL SOLID LANE LINE WITH CONTRAST MARKINGS

DO NOT USE ON EDGE LINES  
(Not For Use On Edge Lines)



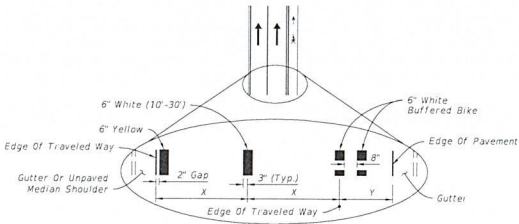
== MARKINGS FOR MERGE



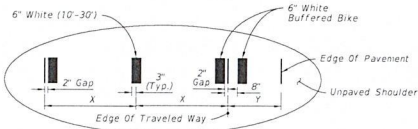
= YIELD LINES

*Yield Lines consist of five - 18" X 27" white triangles which face traffic. Equally space triangles within traffic lane. When a bike lane is present, add one additional triangle in the center of the bike lane.*

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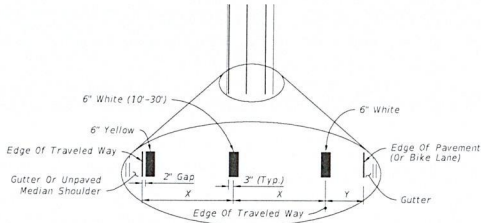
CURB AND GUTTER



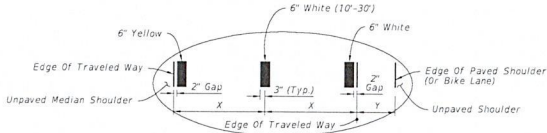
FLUSH SHOULDER

X = LANE WIDTH (FT.)  
Y = BUFFERED BIKE LANE WIDTH (FT.)

STRIPING FOR BUFFERED BIKE LANE



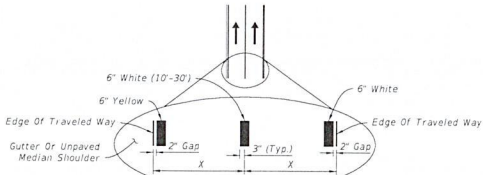
CURB AND GUTTER



FLUSH SHOULDER

X = LANE WIDTH (FT.)  
Y = PAVED SHOULDER / BIKE LANE

STRIPING WITH SHOULDER OR NON-BUFFERED BIKE LANE



X = LANE WIDTH (FT.)

STRIPING WITH NO SHOULDER OR BIKE LANE

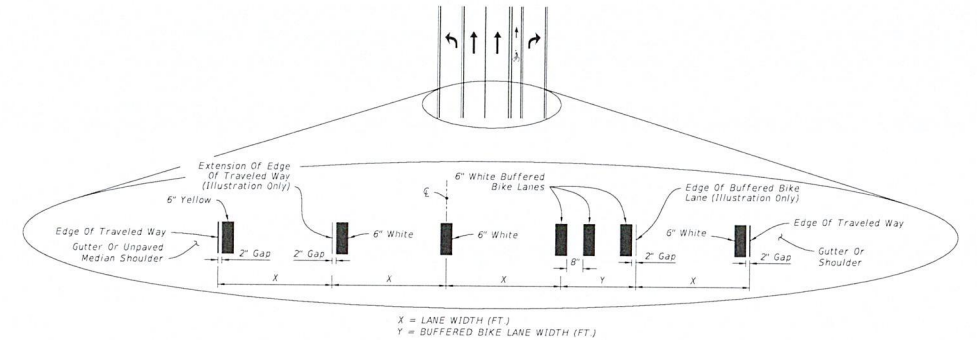
- NOTES:
1. Lane widths (X) may not be same for each lane in the section.
  2. For placement of RPMs, see Index 706-001.

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

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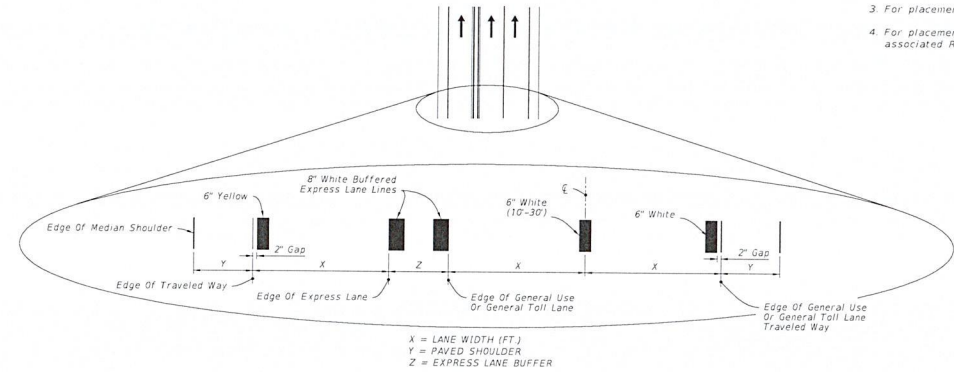


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INTERSECTION APPROACH STRIPING WITH TURN LANES AND BUFFERED BIKE LANE KEY HOLE

- NOTES:
1. Lane widths (X) may not be same for each lane in the section.
  3. For placement of RPMs, see Index 706-001.
  4. For placement of Express Lane markers and associated RPMs, see the Plans.

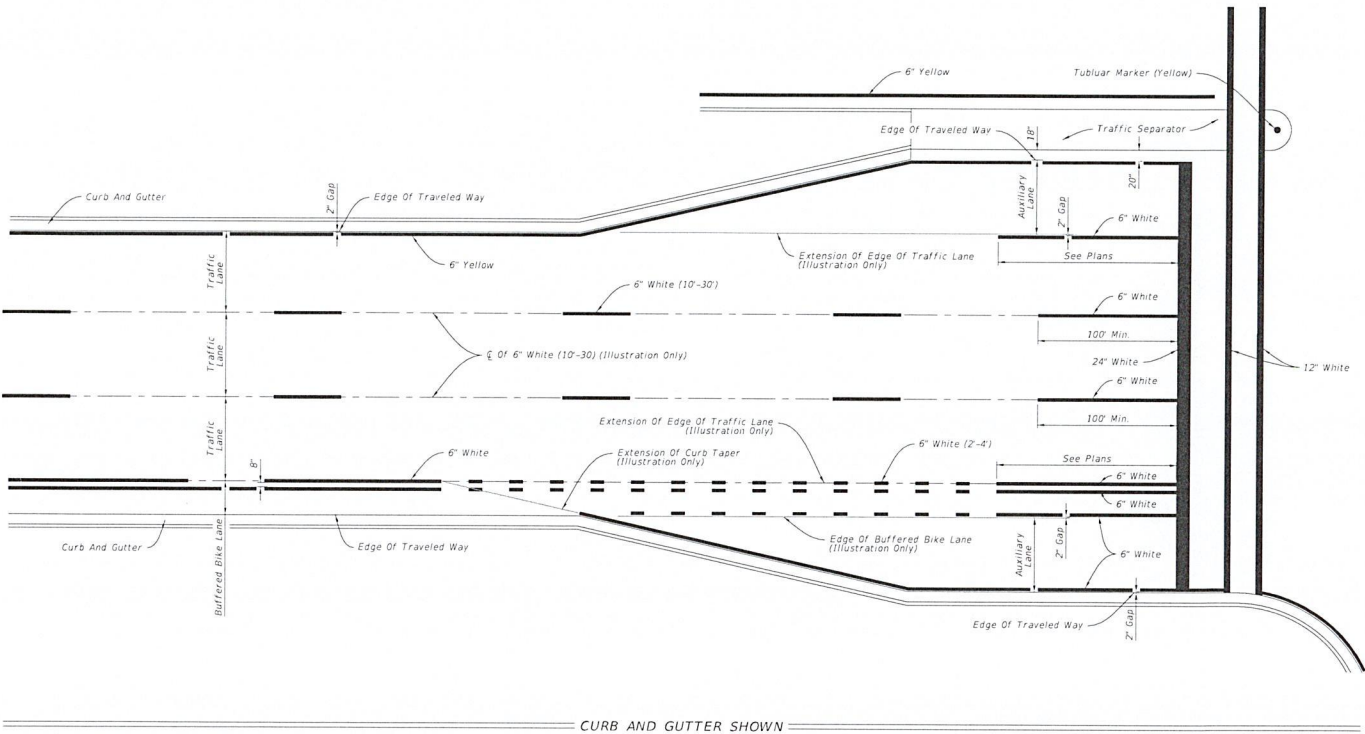


BUFFERED EXPRESS LANE STRIPING

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

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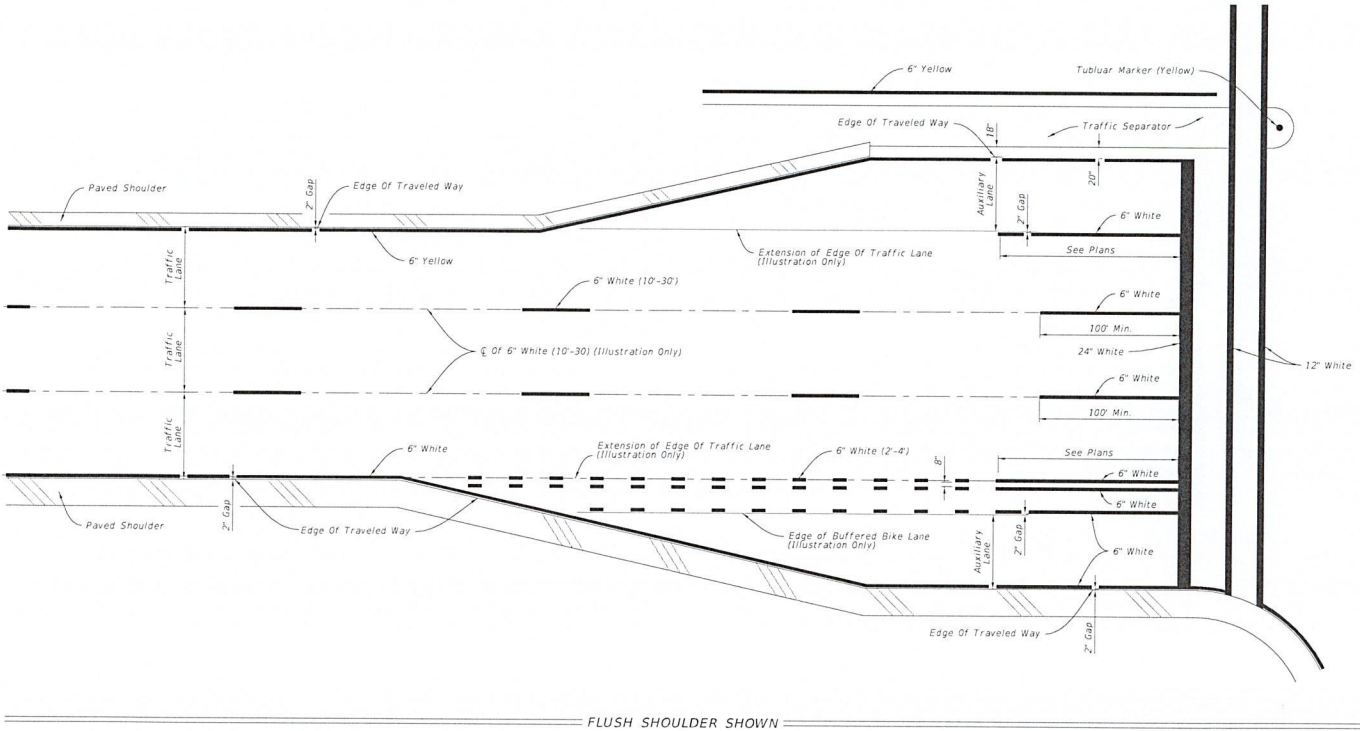


PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

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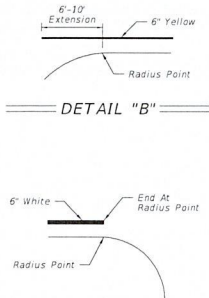
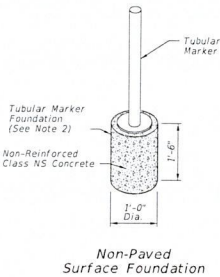
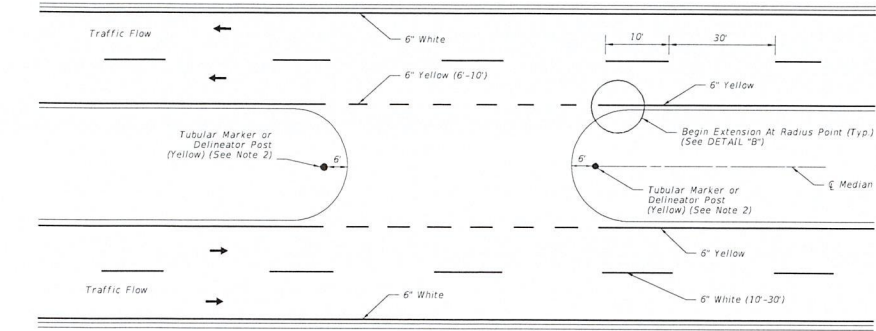


PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

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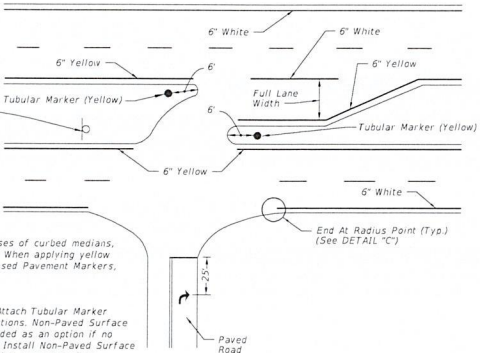
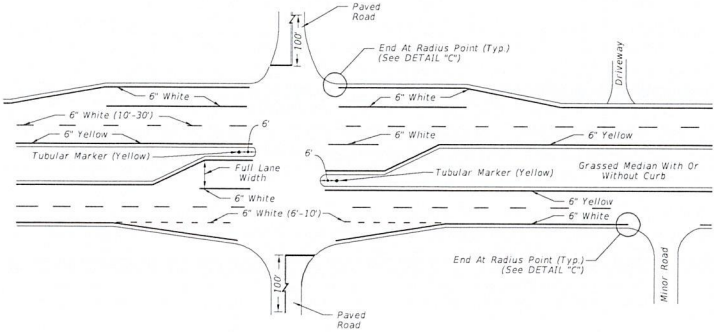
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PAVEMENT MARKINGS AND DELINEATORS FOR MEDIAN CROSSOVER

DETAIL "A"

DETAIL "C"

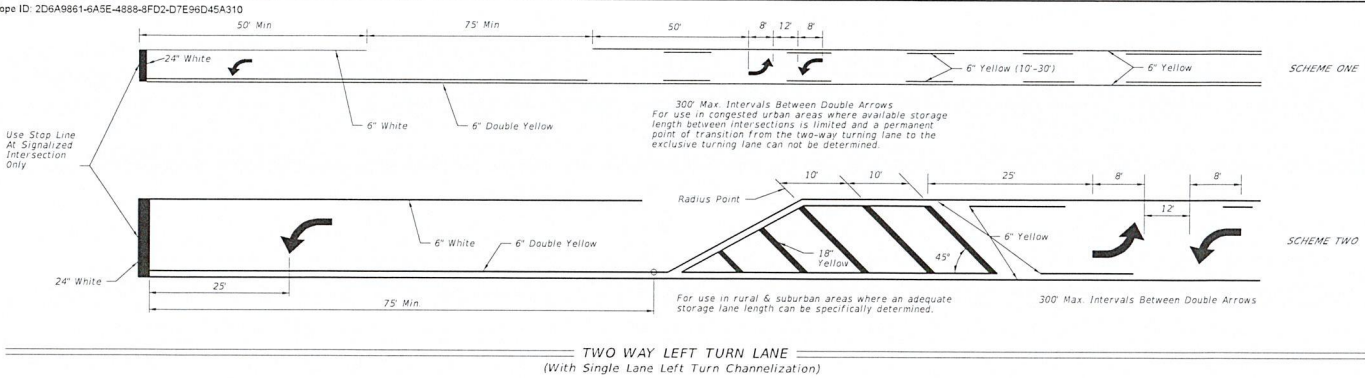


- NOTES:**
1. Apply yellow reflective paint to the noses of curbed medians, traffic separators, and raised islands. When applying yellow reflective paint in conjunction with Raised Pavement Markers, see Index 706-001.
  2. Options for grassed medians:  
A. Option 1: Tubular Marker (yellow). Attach Tubular Marker according to manufacturer's instructions. Non-Paved Surface Foundation (See Detail "A") is provided as an option if no other suitable surface is provided. Install Non-Paved Surface Foundation flush with the surrounding ground surface.  
B. Option 2: Delineator Post. Use yellow retro-reflective sheeting on both sides of the delineator. Install the post so that the top is 4'-0" above the grade at the edge of the pavement.
  3. Extend double yellow centerlines 100' back from intersection on all approaches or 50' for unmarked cross roads.

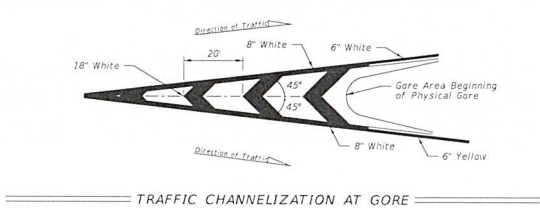
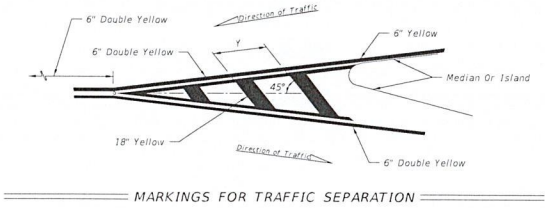
PAVEMENT MARKINGS FOR INTERSECTIONS WITH MAJOR AND MINOR ROADS

LAST REVISION		DESCRIPTION:		FY 2023-24		PAVEMENT MARKINGS		INDEX	SHEET
11/01/21	REVISION			FDOT	STANDARD PLANS			711-001	7 of 13

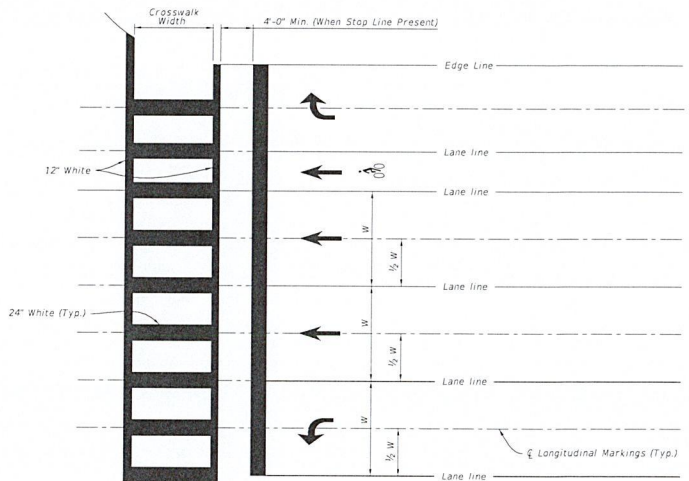
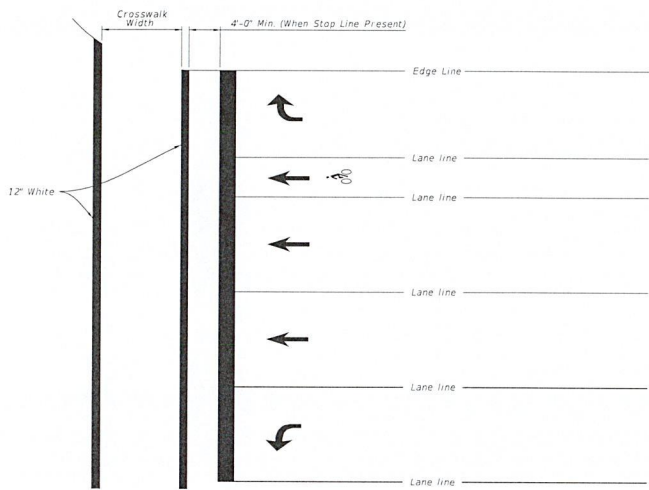
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POSTED SPEED LIMIT MPH	W (FT.)
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40



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NOTES:

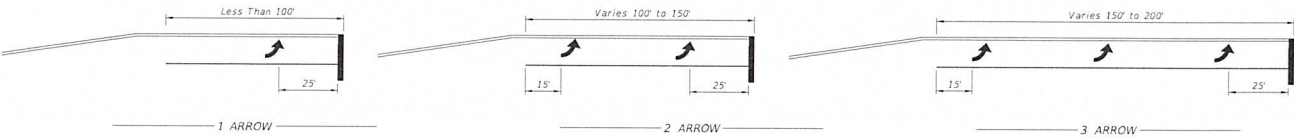
1. For crosswalk width, exceed width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 10' for midblock crosswalks. Measure width from the inside of the transverse crosswalk markings.
2. When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.
3. Refer to Index 522-002 when Curb Ramps are present.

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LAST REVISION 11/01/21	DESCRIPTION:	FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 9 of 13
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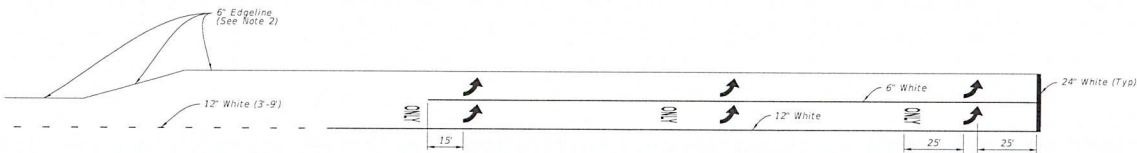


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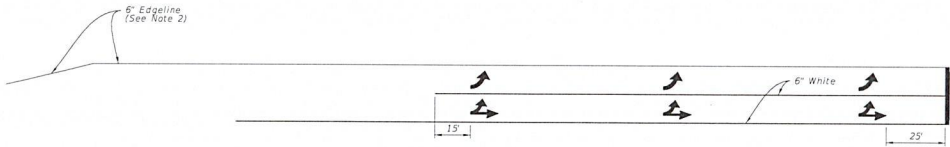


Arrow should be evenly spaced between first and last arrow. Turn lanes longer than 200' add one arrow for each 100' additional length.

ARROW SPACING



Through Lane Becomes Exclusive Left Turn (Drop Lane)




Through Lane Becomes Optional Left Turn

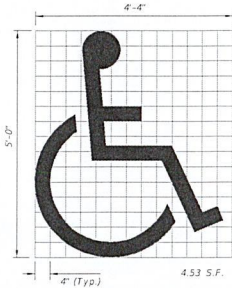
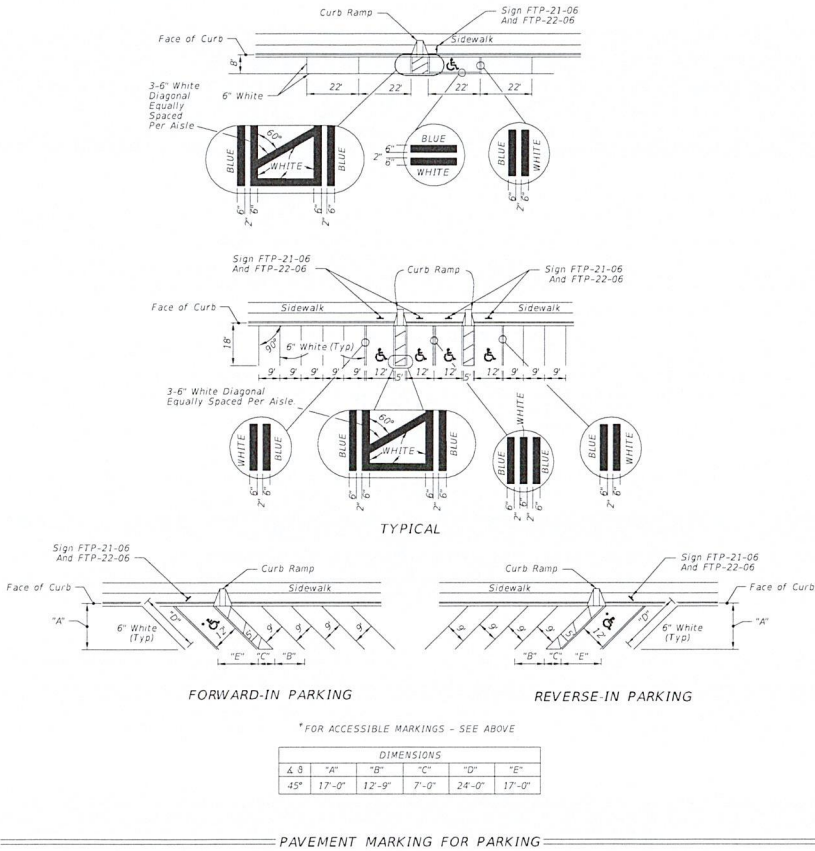
URNS LANE MARKINGS

- NOTES:
- 1 This Index also applies to right turn lanes.
  - 2 Make Edgeline pavement markings yellow for left-turn lanes and white for right-turn lanes.

ARROW SPACING AND TURN LANE MARKINGS

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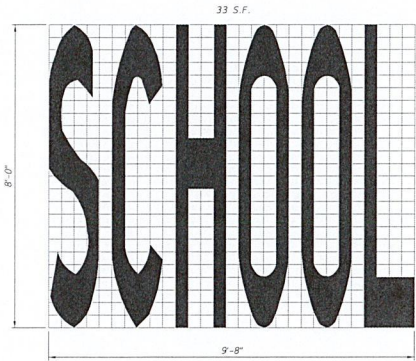
(See Note 5)

UNIVERSAL SYMBOL OF ACCESSIBILITY

- NOTES:**
1. Dimensions are to the centerline of markings.
  2. An Access Aisle is required for each accessible space when angle parking is used.
  3. Criteria for pavement markings only, not public sidewalk curb ramp locations. For ramp locations refer to plans.
  4. Mount FTP-22-06 sign below the FTP-21-06 sign.
  5. Use of the pavement symbol in accessible parking spaces is optional. When pavement symbol is used, the symbol is either 3'-0" or 5'-0" high and white in color.

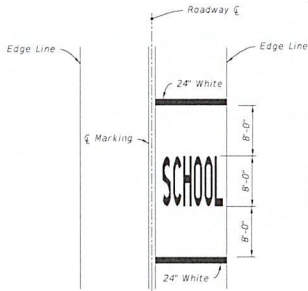
PAVEMENT MARKING FOR PARKING

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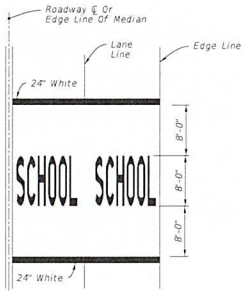


SCHOOL PAVEMENT MARKING

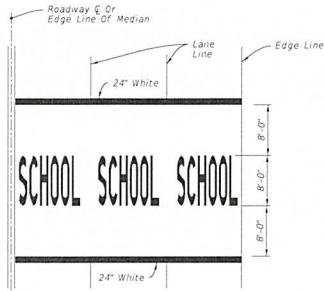
- NOTES:
- 1. All grids are 4" x 4".
  - 2. Pavement Marking Should Not Extend Into Opposing Lane.
  - 3. Center School Pavement Marking in lane.



SINGLE-LANE APPROACH



TWO-LANE APPROACH



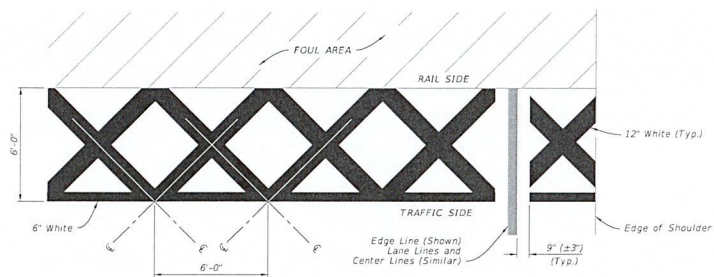
MULTI-LANE APPROACH  
(Three or More)

MARKINGS FOR SCHOOL ZONES

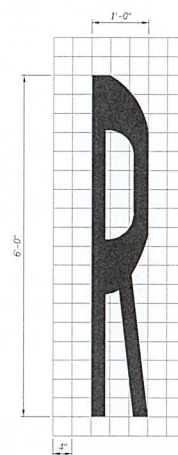
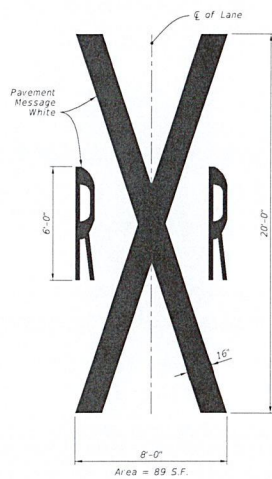
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*Orient Railroad Dynamic Envelope Marking as shown in the Plans.*

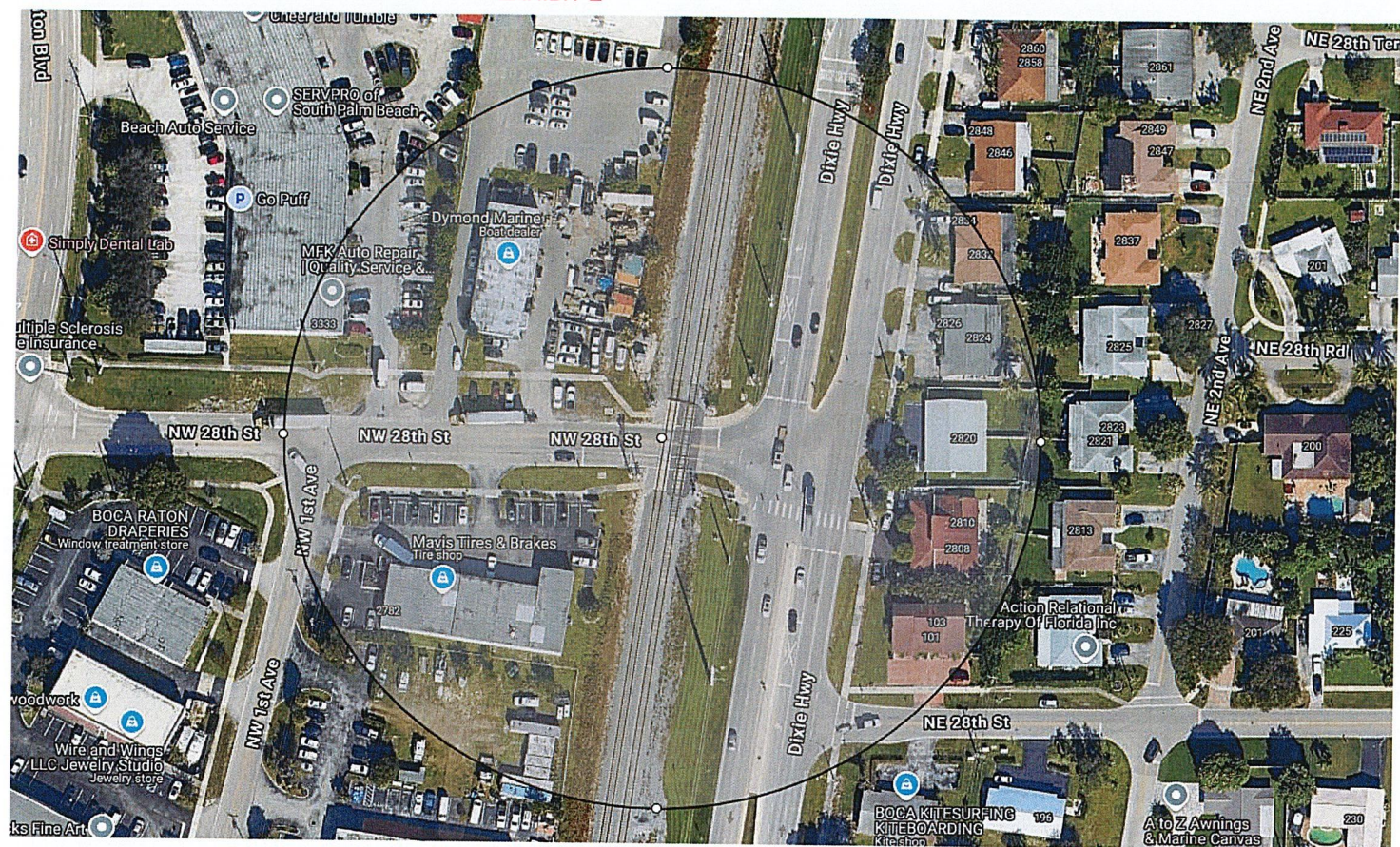


## RAILROAD DYNAMIC ENVELOPE (RDE) PAVEMENT MARKING DETAIL



## RAILROAD CROSSING PAVEMENT MESSAGE

LAST REVISION 11/01/21	DESCRIPTION:	 FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 13 of 13
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EXHIBIT F

SHEET	TABLE OF CONTENTS
1	General Notes, TTC Tables
2	Definitions Temporary Traffic Control Devices Overhead Work Railroads Sight Distance Above Ground Hazard
3	Clear Zone Widths For Work Zones Superelevation Length Of Lane Closures Overweight/Oversize Vehicles Lane Widths High-Visibility Safety Apparel Speed Reduction Signing
4	Flagger Control Survey Work Zones Signs
5	Work Zone Sign Supports
6	Commonly Used Warning and Regulatory Signs In Work Zones
7	Manholes/Crosswalks/Joints Truck Mounted Attenuators Signals Channelizing Devices Channelizing Devices Consistency Advanced Warning Arrow Boards
8	Drop-Offs In Work Zones
9	Business Entrance Temporary Asphalt Separator
10	Channelizing Devices Notes Temporary Barrier Notes
11	Pavement Markings

- GENERAL NOTES:
1. This Index contains information specific to the Federal and State guidelines and standards for the preparation of traffic control plans and for the execution of traffic control in work zones, for construction and maintenance operations and utility work on highways, roads and streets on the State Highway System. Certain requirements in this Index are based on the high volume nature of State Highways. For highways, roads and streets off the State Highway System, the local agency (City/County) having jurisdiction may adopt requirements based on the minimum requirements provided in the MUTCD.
2. Use this Index in accordance with the Plans and Indexes 102-601 through 102-680. Indexes 102-601 through 102-680 are Department-specific typical applications of commonly encountered situations. Adjust device location or number thereof as recommended by the Worksite Traffic Supervisor and approved by the Engineer. Devices include, but are not limited to, flaggers, portable temporary signals, signs, pavement markings, and channelizing devices. Comply with MUTCD or applicable Department criteria for any changes and document the reason for the change.
3. Except for emergencies, any road closure on State Highway System must comply with Section 335.15, F.S.

TABLE 1 CHANNELIZING DEVICE SPACING				
Work Zone Speed (mph)	Max. Spacing (feet)			
	Cones or Temporary Tubular Markers		Type I Barricades, Type II Barricades, Vertical Panels, or Drums	
	Taper	Tangent	Taper	Tangent
≤ 45	25	50	25	50
≥ 50	25	50	50	100

TABLE 2 TAPER LENGTH "L"	
Work Zone Speed (mph)	Min. Length (feet)
≤ 40	L = WS <sup>2</sup> / 60
≥ 45	L = WS
Where: W = width of offset in feet S = speed in mph	

TABLE 3 WORK ZONE SIGN SPACING "X"	
Road Type	Min. Spacing (feet)
Arterials and Collectors with Work Zone Speed ≤ 40 mph	200
Arterials and Collectors with Work Zone Speed ≥ 45 mph	500
Limited Access Roadways *	1,500
* For limited access roadways with work zone speed ≤ 55 mph, the minimum spacing may be reduced in accordance with the MUTCD and as approved by the Engineer.	

TABLE 4 BUFFER LENGTH "B"	
Work Zone Speed (mph)	Min. Length (feet)
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
Note: When Buffer Length "B" cannot be attained due to geometric constraints, use the greatest length possible, but not less than 155 feet.	



DEFINITIONS:

Regulatory Speed (In Work Zones)

The maximum permitted travel speed posted for the work zone is indicated by the regulatory speed limit signs. The work zone speed must be shown or noted in the plans. This speed should be used as the minimum design speed to determine runoff lengths, departure rates, flare rates, lengths of need, clear zone widths, taper lengths, crash cushion requirements, marker spacings, superelevation and other similar features.

Advisory Speed

The maximum recommended travel speed through a curve or a hazardous area

Travel Way

The portion of the roadway for the movement of vehicles. For traffic control through work zones, travel way may include the temporary use of shoulders and any other permanent or temporary surface intended for use as a lane for the movement of vehicular traffic.

- a. Travel Lane: The designated widths of roadway pavement marked to carry through traffic and to separate it from opposing traffic or traffic occupying other traffic lanes.
- b. Auxiliary Lane: The designated widths of roadway pavement marked to separate speed change, turning, passing and climbing maneuvers from through traffic.

Detour, Lane Shift, and Diversion

A detour is the redirection of traffic onto another roadway to bypass the temporary traffic control zone. A lane shift is the redirection of traffic onto a different section of the permanent pavement. A diversion is the redirection of traffic onto a temporary roadway, usually adjacent to the permanent roadway and within the limits of the right of way.

Aboveground Hazard

An aboveground hazard is any object, material or equipment other than traffic control devices that encroaches upon the travel way or that is located within the clear zone which does not meet the Department's safety criteria, i.e., anything that is greater than 4' in height and is firm and unyielding or doesn't meet breakaway requirements.

TEMPORARY TRAFFIC CONTROL DEVICES:

- 1. All temporary traffic control devices shall be On the Department's Approved Products List (APL). Ensure the appropriate APL number is permanently marked on the device in a readily visible location.
- 2. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered. Do not store temporary traffic control devices on the shoulder, sidewalk, or other roadway facility not affected by the work when work is suspended.
- 3. Arrow Boards, Portable Changeable Message Signs, Radar Speed Display Trailer, Portable Regulatory Signs, and any other trailer mounted device shall be delineated with a channelizing device placed at each corner when in use and shall be moved outside the travel way and clear zone or be shielded by a barrier or crash cushion when not in use.

OVERHEAD WORK:

Work is only allowed over a traffic lane when one of the following options is used:

OPTION 1 (OVERHEAD WORK USING A MODIFIED LANE CLOSURE)

Overhead work using a modified lane closure is allowed if all of the following conditions are met:

- a. Work operation is located in a signalized intersection and limited to signals, signs, lighting and utilities.
- b. Work operations are 60 minutes or less.
- c. Speed limit is 45 mph or less.
- d. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
- e. Aerial lift equipment is placed directly below the work area to close the lane.
- f. Traffic control devices are placed in advance of the vehicle/equipment closing the lane using a minimum 100 foot taper.
- g. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.

OPTION 2 (OVERHEAD WORK ABOVE AN OPEN TRAFFIC LANE)

Overhead work above an open traffic lane is allowed if all of the following conditions are met:

- a. Work operation is located on a utility pole, light pole, signal pole, or their appurtenances.
- b. Work operations are 60 minutes or less.
- c. Speed limit is 45 mph or less.
- d. No encroachment by any part of the work activities and equipment within an area bounded by 2 feet outside the edge of travel way and 18 feet high.
- e. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
- f. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
- g. Adequate precautions are taken to prevent parts, tools, equipment and other objects from falling into open lanes of traffic.
- h. Other Governmental Agencies, Rail facilities, or Codes may require a greater clearance. The greater clearance required prevails as the rule.

OPTION 3 (OVERHEAD WORK ADJACENT TO AN OPEN TRAFFIC LANE)

Overhead work adjacent to an open traffic lane is allowed if all of the following conditions are met:

- a. Work operation is located on a utility pole, light pole, signal pole, or their appurtenances.
- b. Work operations are 1 day or less.
- c. Speed limit is 45 mph or less.
- d. No encroachment by any part of the work activities and equipment within 2 foot from the edge of travel way up to 18' height. Above 18' in height, no encroachment by any part of the work activities and equipment over the open traffic lane (except as allowed in Option 2 for work operations of 60 minutes or less).
- e. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
- f. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
- g. Adequate precautions are taken to prevent parts, tools, equipment and other objects from falling into open lanes of traffic.
- h. Other Governmental Agencies, Rail facilities, or Codes may require a greater clearance. The greater clearance required prevails as the rule.

OVERHEAD WORK: (Cont.)

OPTION 4 (OVERHEAD WORK MAINTAINING TRAFFIC WITH NO ENCROACHMENT BELOW THE OVERHEAD WORK AREA)

Traffic shall be detoured, shifted, diverted or paced as to not encroach in the area directly below the overhead work operations in accordance with the appropriate index drawing or detailed in the plans. This option applies to, but not limited to, the following construction activities:

- a. Beam, girder, segment, and bent/pier cap placement.
- b. Form and falsework placement and removal.
- c. Concrete placement.
- d. Railing construction located at edge of deck.
- e. Structure demolition.

OPTION 5 (CONDUCTOR/CABLE PULLING ABOVE AN OPEN TRAFFIC LANE)

Overhead cable and/or de-energized conductor installations initial pull to proper tension shall be done in accordance with the appropriate Index or temporary traffic control plan.

Continuous pulling operations of secured cable and/or conductors are allowed over open lane(s) of traffic with no encroachment by any part of the work activities, materials or equipment within the minimal vertical clearance above the travel way. The utility shall take precautions to ensure that pull ropes and conductors/cables at no time fall below the minimum vertical clearance.

On Limited Access facilities, a site specific temporary traffic control plan is required. The temporary traffic control plan shall include:

- a. The temporary traffic control set up for the initial pulling of the pull rope across the roadway.
- b. During pulling operations, advance warning consisting of no less than a Changeable Message Sign upstream of the work area with alternating messages, "Overhead Work Ahead" and "Be Prepared to Stop" followed by a traffic control officer and police vehicle with blue lights flashing during the pulling operation.

RAILROADS:

Railroad crossings affected by a construction project should be evaluated for traffic controls to reduce queuing on the tracks. The evaluation should include as a minimum: traffic volumes, distance from the tracks to the intersections, lane closure or taper locations, signal timing, etc.


SIGHT DISTANCE:

- 1. Tapers: Transition tapers should be obvious to drivers. If restricted sight distance is a problem (e.g., a sharp vertical or horizontal curve), the taper should begin well in advance of the view obstruction. The beginning of tapers should not be hidden behind curves.
- 2. Intersections: Traffic control devices at intersections must provide sight distances for the road user to perceive potential conflicts and to traverse the intersection safely. Construction equipment and materials shall not restrict intersection sight distance.

ABOVEGROUND HAZARD:

- 1. Aboveground hazards (see definitions) are to be considered work areas during working hours and treated with appropriate work zone traffic control procedures. During nonworking hours, all objects, materials and equipment that constitute an aboveground hazard must be stored/placed outside the travel way and clear zone or be shielded by a barrier or crash cushion.
- 2. For aboveground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

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LAST REVISION 11/01/20	DESCRIPTION: REVISION	 FY 2023-24 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-600	SHEET 2 of 11
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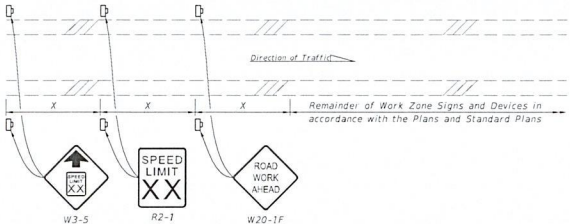
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CLEAR ZONE WIDTHS FOR WORK ZONES:

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 the FDOT Design Manual 215.2.

TABLE 5 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	4' BEHIND FACE OF CURB	4' BEHIND FACE OF CURB

NOTE: For temporary conditions where existing curb has been removed but not reconstructed, curb and gutter values may be used.



- NOTES:
1. X = Work Zone Sign Spacing
  2. When called for in the Plans, use this detail in accordance with the Plans and Standard Plans. Place the speed reduction signs (W3-5 and R2-1) in advance of the "Road Work Ahead" sign (W20-1F) as shown.
  3. Do not use this detail in conjunction with the Motorist Awareness System.
  4. For speed reductions greater than 10 MPH, reduce the speed in 10 MPH increments of "X" distance. Do not reduce the speed below the minimum statutory speed for the class of facility.
  5. Place additional "Speed Limit" signs (R2-1) at intervals of no more than one mile for rural conditions and 1,000 feet for urban conditions.
  6. For undivided roadways, omit the signs shown in the median.
  7. Remove temporary regulatory speed signs as soon as the conditions requiring the reduced speed no longer exist. Once the work zone regulatory speeds are removed, the regulatory speed existing prior to construction will automatically go back into effect.

SPEED REDUCTION SIGNING

SUPERELEVATION:

Horizontal curves constructed in conjunction with work zone traffic control should have the required superelevation applied to the design radii. Under conditions where normal crown controls curvature, the minimum radii that can be applied are listed in the table below.

TABLE 6 MINIMUM RADII FOR NORMAL CROWN	
WORK ZONE POSTED SPEED	MINIMUM RADIUS
MPH	Feet
70	4090
65	3130
60	2450
55	1840
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii is Used	

OVERWEIGHT/OVERSIZE VEHICLES:

Restrictions to Lane Widths, Heights or Load Capacity can greatly impact the movement of over dimensioned loads. The Contractor shall notify the Engineer who in turn shall notify the State Permits Office, phone no. (850) 410-5777, at least seven calendar days in advance of implementing a maintenance of traffic plan which will impact the flow of overweight/oversized vehicles. Information provided shall include location, type of restriction (height, width or weight) and restriction time frames. When the roadway is restored to normal service the State Permits Office shall be notified immediately.

LANE WIDTHS:

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. Provide minimum widths for work zone travel lanes as follows: 11' for Interstate with at least one 12' lane provided in each direction, unless formally excepted by the Federal Highway Administration; 11' for all other limited access roadways; and 10' for all other facilities.

HIGH-VISIBILITY SAFETY APPAREL:

All high-visibility safety apparel shall meet the requirements of the International Safety Equipment Association (ISEA) and the American National Standards Institute (ANSI) for "High-Visibility Safety Apparel", and labeled as ANSI/ISEA 107-2004 or newer. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined by the standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 1,000 feet. Class 3 apparel may be substituted for Class 2 apparel. Replace apparel that is not visible at 1,000 feet.

WORKERS: All workers within the right-of-way shall wear ANSI/ISEA Class 2 apparel. Workers operating machinery or equipment in which loose clothing could become entangled during operation shall wear fitted high-visibility safety apparel. Workers inside the bucket of a bucket truck are not required to wear high-visibility safety apparel.

UTILITIES: When other industry apparel safety standards require utility workers to wear apparel that is inconsistent with FDOT requirements such as NFPA, OSHA, ANSI, etc., the other standards for apparel may prevail.

FLAGGERS: For daytime activities, Flaggers shall wear ANSI/ISEA Class 2 apparel. For nighttime activities, Flaggers shall wear ANSI/ISEA Class 3 apparel.

LENGTH OF LANE CLOSURES:

For interstates and state highways with a posted speed of 55MPH or greater, lane closures must not exceed 3 miles (includes taper, buffer, and work zone) in any given direction and must not close two consecutive interchanges.

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FLAGGER CONTROL:

Regulatory Speed (In Work Zones)

Where flaggers are used, a FLAGGER symbol or legend sign must replace the WORKERS symbol or legend sign.

The flagger must be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed or to stop as required before entering the work site. Flaggers shall be positioned to maintain maximum color contrast between the flagger's high-visibility safety apparel and equipment and the work area background.

Hand-Signaling Devices

STOP/SLOW paddles are the primary hand-signaling device. The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. If the STOP/SLOW paddle is placed on a rigid staff, the minimum length of the staff, measured from the bottom of the paddle to the end of the staff that rests on the ground, must not be less than 6 ft. STOP/SLOW paddles shall be at least 24 inches wide with letters at least 6 inches high and should be fabricated from light semirigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night-time, the STOP/SLOW paddle shall be retroreflectORIZED.

Flag use is limited to immediate emergencies, intersections, and when working on the centerline or shared left turn lanes where two (2) flaggers are required and there is opposing traffic in the adjacent lanes. Flags, when used, shall be a minimum of 24 inches square, made of a good grade of red material, and securely fastened to a staff that is approximately 36 inches in length. When used at nighttime, flags shall be retroreflectORIZED red.

Flashlight, lantern or other lighted signal that will display a red warning light shall be used at night.

Flagger Stations

Flagger stations shall be located far enough in advance of the work area so that approaching road users will have sufficient distance to stop before entering the work area. When used at nighttime, the flagger station shall be illuminated.

SURVEY WORK ZONES:

The SURVEY CREW AHEAD symbol or legend sign shall be the principal Advance Warning Sign used for Traffic Control Through Survey Work Zones and may replace the ROAD WORK AHEAD sign when lane closures occur, at the discretion of the Party Chief.

When Traffic Control Through Work Zones is being used for survey purposes only, the END ROAD WORK sign as called for on certain 102 Series of Indexes should be omitted.

Survey Between Active Traffic Lanes or Shared Left Turn Lanes

The following provisions apply to Main Roadway Traffic Control Work Zones. These provisions must be adjusted by the Party Chief to fit roadway and traffic conditions when the Survey Work Zone includes intersections.

(A) A STAY IN YOUR LANE (MOT-1-06) sign shall be added to the Advance Warning Sign sequence as the second most immediate sign from the work area.

(B) Elevation Surveys-Cones may be used at the discretion of the Party Chief to protect prism holder and flagger(s). Cones, if used, may be placed at up to 50' intervals along the break line throughout the work zone.

SURVEY WORK ZONES: (Cont.)

(C) Horizontal Control-With traffic flow in the same direction, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' towards the flow of traffic.

(D) Horizontal Control-With traffic flow in opposite directions, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' in both directions towards the flow of traffic.

SIGNS:

SIGN MATERIALS

Mesh signs and non-retroreflective vinyl signs may only be used for daylight operations. Non-retroreflective vinyl signs must meet the requirements of Specifications Section 994.

Retroreflective vinyl signs meeting the requirements of Specification Section 994 may be used for daylight or night operations not to exceed 1 day except as noted in the Indexes.

Rigid or Lightweight sign panels may be used in accordance with the vendor APL drawing for the sign stand to which they are attached.

INTERSECTING ROAD SIGNING

Signing for the control of traffic entering and leaving work zones by way of intersecting crossroads shall be adequate to make drivers aware of work zone conditions. When Work operations exceed 60 minutes, place the ROAD WORK AHEAD sign on the side street entering the work zone.

ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING

Adjoining work zones may not have sufficient spacing for standard placement of signs and other traffic control devices in their advance warning areas or in some cases other areas within their traffic control zones. Where such restraints or conflicts occur or are likely to occur, one of the following methods will be employed to avoid conflicts and prevent conditions that could lead to misunderstanding on the part of the traveling public as to the intended travel way by the traffic control procedure applied.

(A) For scheduled projects the engineer in responsible charge of project design will resolve anticipated work zone conflicts during the development of the project traffic control plan. This may entail revision of plans on preceding projects and coordination of plans on concurrent projects.

(B) Unanticipated conflicts arising between adjoining in progress highway construction projects will be resolved by the Resident Engineer for projects under his residency, and, by the District Construction Engineer for in progress projects under adjoining residencies.

(C) The District Maintenance Engineer will resolve anticipated and occurring conflicts within scheduled maintenance operations.

(D) The Unit Maintenance Engineer will resolve conflicts that occur within routine maintenance works; between routine maintenance work, unscheduled work and/or permitted work; and, between unit controlled maintenance works and highway construction projects.

SIGNS: (Cont.)

SIGN COVERING AND INTERMITTENT WORK STOPPAGE SIGNING

Existing or temporary traffic control signs that are no longer applicable or are inconsistent with intended travel paths shall be removed or fully covered.

Sign blanks or other available coverings must completely cover the existing sign. Rigid sign coverings shall be the same size as the sign it is covering, and bolted in a manner to prevent movement.

Sign covers are incidental to work operations and are not paid for separately.

SIGNING FOR DETOURS, LANE SHIFTS AND DIVERSIONS

Detours should be signed clearly over their entire length so that motorists can easily determine how to return to the original roadway. The reverse curve (W1-4) warning sign should be used for the advance warning for a lane shift. A diversion should be signed as a lane shift.

EXTENDED DISTANCE ADVANCE WARNING SIGN

Advance Warning Signs shall be used at extended distance of one-half mile or more when limited sight distance or the nature of the obstruction may require a motorist to bring their vehicle to a stop. Extended distance Advance Warning Signs may be required on any type roadway, but particularly be considered on multilane divided highways where vehicle speed is generally in the higher range (45 MPH or more).

UTILITY WORK AHEAD SIGN

The UTILITY WORK AHEAD (W21-7) sign may be used as an alternate to the ROAD WORK AHEAD or the ROAD WORK XX FT (W20-1) sign for utility operations on or adjacent to a highway.

LENGTH OF ROAD WORK SIGN

The length of road work sign (G20-1) bearing the legend ROAD WORK NEXT-----MILES is required for all projects of more than 2 miles in length. The number of miles entered should be rounded up to the nearest mile. The sign shall be located at begin construction points.

GROOVED PAVEMENT AHEAD SIGN

The GROOVED PAVEMENT AHEAD sign is required 500 feet in advance of a milled or grooved surface open to traffic. The W8-1SP placard shall be used in conjunction with the GROOVED PAVEMENT AHEAD sign.

END ROAD WORK SIGN

The END ROAD WORK sign (G20-2) should be installed on all projects, but may be omitted where the work operation is less than 1 day. The sign should be placed approximately 500 feet beyond the end of a construction or maintenance project unless other distance is called for in the plans. When other Construction or Maintenance Operations occur within 1 mile this sign should be omitted and signing coordinated in accordance with Index 102-600, ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING.

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1. All signs shall be post mounted when work operations exceed one day except for:
- a. Road closure signs mounted in accordance with the vendor drawing for the Type III Barricade shown on the APL.
  - b. Pedestrian and bicycle advanced warning or pedestrian regulatory signs mounted on sign supports in accordance with the vendor drawing shown on the APL.
  - c. Median barrier mounted signs per Index 700-013.
  - d. Bridge mounted signs per Index 700-012.
2. Unless shielded with barrier or outside of the Clear Zone, signs mounted on temporary supports or barricades, and barricade/sign combination must be crashworthy in accordance with NCHRP 350 requirements and included on the Approved Products List (APL).
3. Use only approved systems listed on the Department's Approved Products List (APL).
4. Manufacturers seeking approval of U-Channel and steel square tube sign support assemblies for inclusion on the Approved Products List (APL) must submit a APL application, design calculations (for square tube only), and detailed drawings showing the product meets all the requirements of this Index.
5. Provide 3 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.43 in<sup>3</sup> for 60 ksi steel, a minimum section modulus of 0.37 in<sup>3</sup> for 70 ksi steel, or a minimum section modulus of 0.34 in<sup>3</sup> for 80 ksi steel.
6. Provide 4 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.56 in<sup>3</sup> for 60 ksi steel, or a minimum section modulus of 0.47 in<sup>3</sup> for 70 ksi or 80 ksi steel.
7. U-channel posts shall conform with ASTM A 499, Grade 60, or ASTM A 576, Grade 1080 (with a minimum yield strength of 60 ksi). Square tube posts shall conform with ASTM A 653, Grade 50, or ASTM A 1011, Grade 50.
8. Sign attachment bolts, washers, nuts, and spacers shall conform with ASTM A307 or A 36.
9. Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
10. The contractor may install 3 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
11. Install all posts plumb.
12. The contractor may set posts in preformed holes to the specified depth with suitable backfill tamped securely on all sides, or drive 3 lb/ft sign posts and any size base post in accordance with the manufacturer's detail shown on the APL.

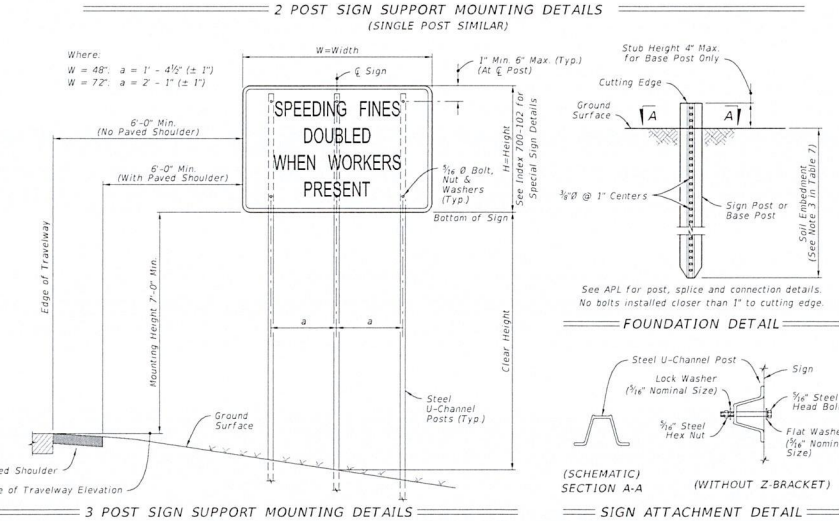
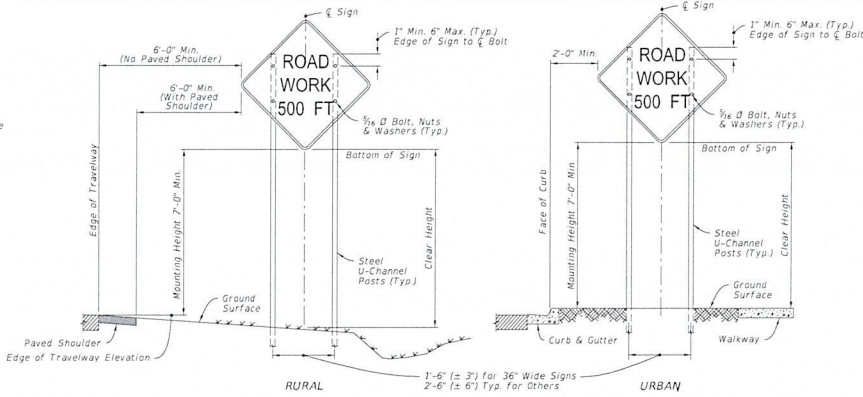


TABLE 7 POST AND FOUNDATION TABLE FOR WORK ZONE SIGNS		
SIGN SHAPE	SIGN SIZE (inches)	NUMBER OF STEEL U CHANNEL POSTS
Octagon	30x30	1
	36x36x36	1
	48x48x48	1
	60x60x60	2
	24x18	1
Rectangle (W x H)	24x30	1
	30x24	1
	36x18	1
	36x24	1
	36x36	2
	48x30	2
	48x36	2
	48x48	2
	48x60	3
	72x48	3
Square	30x30	1
	36x36	2
	48x48	2
Diamond	48x48	2
Circle	36"	2

Notes For Table:

- Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.
- Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.
- For both 3 lb/ft and 4 lb/ft base or sign posts installed in rock, a minimum cumulative depth of 2' of rock layer is required.
- The soil plate as shown on the APL vendor drawing is not required for base posts or sign posts installed in existing rock (as defined in Note 3), asphalt roadway, shoulder pavement or soil under sidewalk.
- For diamond warning signs with supplement plaque (up to 5 ft<sup>2</sup> in area), use 4 lb/ft posts for up to 10 ft Clear Height (measure to the bottom of diamond warning sign).



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EXIT OPEN

E5-2

B/O

EXIT CLOSED

E5-2a

B/O

ROAD WORK NEXT XX MILES

G20-1

B/O

END ROAD WORK

G20-2

B/O

PILOT CAR (FLUORESCENT W)

G20-4

B/O

DETOUR

M4-8

B/O

END DETOUR

M4-8A

B/O

DETOUR

M4-9L

B/O

DETOUR

M4-9R

B/O

DETOUR

M4-10L

O/B

DETOUR

M4-10R

O/B

STOP

OM-3R

B/Y

YIELD

R1-1

W/R

YIELD

R1-2

RW/R

SPEED LIMIT XX

R2-1

B/W

DO NOT PASS

R4-1

B/W

PASS WITH CARE

R4-2

B/W

TRUCKS USE RIGHT LANE

R4-5

B/W

TRUCKS USE RIGHT LANE

R4-7

B/W

TRUCKS USE RIGHT LANE

R4-8

B/W

KEEP LEFT

R4-7AL

B/W

KEEP RIGHT

R4-7AR

B/W

KEEP LEFT

R4-7BL

B/W

KEEP RIGHT

R4-7BR

B/W

BIKE MAY USE FULL LANE

R4-11

B/W

DO NOT ENTER

R5-1

W/W

PEDESTRIAN CROSSWALK

R9-8

B/W

SIDEWALK CLOSED

R9-9

B/W

PEDESTRIAN CLOSED

R9-10

B/W

PEDESTRIAN CLOSED

R9-11

B/W

PEDESTRIAN CLOSED

R9-11a

B/W

ROAD CLOSED

R11-2

B/W

ROAD CLOSED

W1-1R

B/O

ROAD CLOSED

W1-2R

B/O

ROAD CLOSED

W1-3R

B/O

ROAD CLOSED

W1-4R

B/O

ROAD CLOSED

W1-4b

B/O

ROAD CLOSED

W1-4c

B/O

ROAD CLOSED

W1-6

B/O

ROAD CLOSED

W1-7

B/O

ROAD CLOSED

W1-8

B/O

ROAD CLOSED

W3-1

RB/O

ROAD NARROWED

W3-2

RB/O

ROAD NARROWED

W3-3

B(RYG)/O

BE PREPARED TO STOP

W3-4

B/O

BE PREPARED TO STOP

W3-5

B/O

ROAD NARROWED

W4-1

B/O

ROAD NARROWED

W4-2

B/O

ROAD NARROWED

W5-1

B/O

ROAD NARROWED

W5-2

B/O

ROAD NARROWED

W5-3

B/O

ROAD NARROWED

W6-1

B/O

ROAD NARROWED

W6-2

B/O

ROAD NARROWED

W6-3

B/O

ROAD NARROWED

W8-1

B/O

ROAD NARROWED

W8-2

B/O

ROAD NARROWED

W8-3

B/O

ROAD NARROWED

W8-4

B/O

ROAD NARROWED

W8-5

B/O

ROAD NARROWED

W8-6

B/O

ROAD NARROWED

W8-7

B/O

ROAD NARROWED

W8-8

B/O

ROAD NARROWED

W8-9

B/O

SHOULDER DROFF

W8-9a

B/O

UNEVEN LANES

W8-11

B/O

BIKE

W8-15P

B/O

LEFT LANE ENDS

W9-1L

B/O

RIGHT LANE ENDS

W9-1R

B/O

LANE ENDS MERGE LEFT

W9-2L

B/O

LANE ENDS MERGE RIGHT

W9-2R

B/O

NO RIGHT TURN

W10-1

B/O

BIKE

W11-1

B/O

PEDESTRIAN

W11-2

B/O

ROAD NARROWED

W12-1

B/O

ROAD NARROWED

W12-2

B/O

ROAD NARROWED

W13-1

B/O

SHARE THE ROAD

W16-1P

B/O

XXX FEET

W16-2P

B/O

XXX FEET

W16-7P

B/O

ROAD WORK 500 FT

W20-1A

B/O

ROAD WORK 1000 FT

W20-1B

B/O

ROAD WORK 1000 FT

W20-1C

B/O

ROAD WORK 12 MILE

W20-1D

B/O

ROAD WORK 1 MILE

W20-1E

B/O

ROAD WORK AHEAD

W20-1F

B/O

DETOUR AHEAD

W20-2A

B/O

DETOUR 500 FT

W20-2B

B/O

DETOUR 1000 FT

W20-2C

B/O

DETOUR 1500 FT

W20-2D

B/O

DETOUR 12 MILE

W20-2E

B/O

ROAD CLOSED

W20-3

B/O

ONE LANE ROAD

W20-4

B/O

LEFT TWO LANES CLOSED AHEAD

W20-5a

B/O

LEFT TWO LANES CLOSED

W20-5L

B/O

RIGHT TWO LANES CLOSED

W20-5R

B/O

CENTER LANE CLOSED

W20-5C

B/O

FLAGGER

W20-7A

B/O

WORKERS

W20-7

B/O

WORKERS

W21-1A

B/O

SHOULDER WORK

W21-1

B/O

SHOULDER WORK

W21-5

B/O

RIGHT SHOULDER CLOSED

W21-5a

B/O

SURVEY CREW

W21-6

B/O

UTILITY WORK AHEAD

W21-7

B/O

BLASTING ZONE AHEAD

W22-1

B/O

TURN OFF DUALY RADIO AND CELLPHONE

W22-2

B/O

END BLASTING ZONE

W22-3

B/O

**NOTES:**

1. The size of diamond shaped Temporary Traffic Control (TTC) warning signs shall be a minimum of 48" X 48".

2. Fluorescent orange shall be used for all orange colored work zone signs.

3. The sign shields, symbols and messages contained on this sheet are provided for ready reference to those signs used in the development of the 102 Series of Indexes and are commonly used in the development of traffic control plans. For additional signs and sign detail information refer to the STANDARD HIGHWAY SIGNS MANUAL as specified in the MUTCD. Special signs for traffic control plans will be as approved by the State Traffic Plans Engineer.

The sign codes shown on this sheet are for the purpose of identifying cell names found in the Traffic Control Cell Library (TCZ.Cel).

The STANDARD HIGHWAY SIGNS MANUAL should be referenced for the official sign codes for use in the development of traffic control plans.

See Index 700-102 for MOT sign details.

**COLOR CODES:**

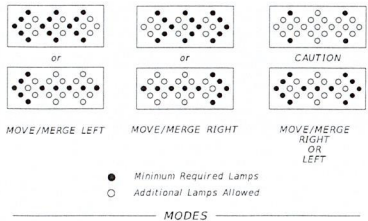
Legend and/or Symbol Background

R-Red (Reflectorized)  
Y-Yellow (Reflectorized)  
G-Green (Reflectorized)  
O-Orange (Reflectorized)  
B-Black (Non-Reflectorized)  
W-White (Reflectorized)

COMMONLY USED WARNING AND REGULATORY SIGNS IN WORK ZONES

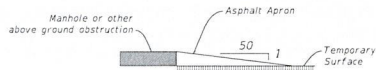
LAST REVISION	DESCRIPTION	FY 2023-24	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX	SHEET
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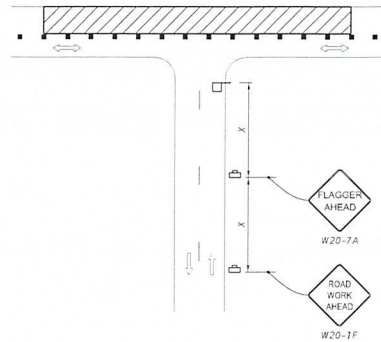
**NOTES:**  
An arrow board in the arrow or chevron mode shall be used only for stationary or moving lane closures on multilane roadways.  
For shoulder work, blocking the shoulder, for roadside work near the shoulder, or for temporarily closing one lane on a two-lane, two-way roadway, an arrow board shall be used only in the caution mode.  
A single arrow board shall not be used to merge traffic laterally more than one lane. When arrow boards are used to close multiple lanes, a single board shall be used at the merging taper for each closed lane.  
When Advance Warning Arrow Boards are used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.

ADVANCE WARNING ARROW BOARDS



**NOTES:**  
Manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than 1/4" shall have a temporary asphalt apron constructed as shown above.  
All transverse joints that have a difference in elevation of 1" or more shall have a temporary asphalt apron constructed as shown above.  
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.

MANHOLES/CROSSWALKS/JOINTS



**NOTE:**  
Optionally, use "Flagger Ahead" sign with text (W20-7A) instead of "Flagger Ahead" sign with symbol (W20-7).

SIDE ROAD INTERSECTING THE WORK ZONE

**SIGNALS:**  
Existing traffic signal operations that require modification in order to carry out work zone traffic control shall be included in the Plans and be approved by the District Traffic Operations Engineer.  
Refer to Specification 102-9 for additional information.

**CHANNELIZING DEVICES:**  
Channelizing 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 and the 102 Series of Indexes. Lighting Devices must not be used to supplement channelization. Limit tapers and channelizing devices for paved shoulders less than 4' in width.

**CHANNELIZING DEVICE CONSISTENCY:**  
Barricades, vertical panels, cones, tubular markers and drums shall not be intermixed within either the lateral transition or within the tangent alignment.

**TRUCK/TRAILER-MOUNTED ATTENUATORS:**  
Truck/Trailer-mounted attenuators (TMA) can be used for moving operations and short-term stationary operations. For moving operations, see Index 102-607. For short-term, stationary operations, see Part VI of the MUTCD.

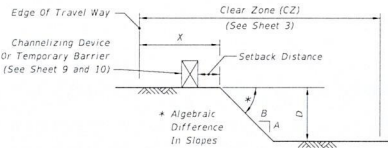
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DROP-OFF CONDITION NOTES

- 1. These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.
- 2. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required (See Table 8). A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slope (A/B) steeper than 1:4. In superelevated sections, the algebraic difference in slopes should not exceed 0.25 (See Drop-off Condition Detail).
- 3. Drop-offs may be mitigated by placement of slopes with optional base material per Specifications Section 285. Slopes shallower than 1:4 may be required to avoid algebraic difference in slopes greater than 0.25. Include the cost for the placement and removal of the material in Maintenance of Traffic, L5. Use of this treatment in lieu of a temporary barrier is not eligible for CSIP consideration. Conduct daily inspections for deficiencies related to erosion, excessive slopes, rutting or other adverse conditions. Repair any deficiencies immediately.
- 4. For Setback Distance, refer to the Index or Approved Products List (APL) drawing of the selected barrier.
- 5. For Conditions 1 and 3 provided in Table 8, any drop-off condition that is created and restored within the same work period will not be subject to use of temporary barriers; however, channelizing devices will be required.
- 6. When permanent curb heights are  $\geq 6"$ , no channelizing device will be required. For curb heights  $< 6"$ , see Table 8.

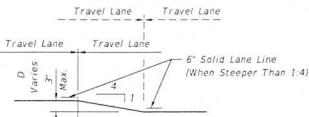


DROP-OFF CONDITION DETAIL

Table 8 Drop-off Protection Requirements			
Condition	X (ft)	D (in.)	Device Required
1	0-12	$> 3$	Temporary Barrier
2	$> 12$ -CZ	$> 3$ to $\leq 5$	Channelizing Device
3	0-CZ	$> 5$	Temporary Barrier
4	Removal of Bridge or Retaining Wall Barrier		Temporary Barrier
5	Removal of portions of Bridge Deck		Temporary Barrier

TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING NOTES

- 1. This treatment applies to resurfacing or milling operations between adjacent travel lanes.
- 2. Whenever there is a difference in elevation between adjacent travel lanes, the WB-11 sign with "UNEVEN LANES" is required at intervals of  $\frac{1}{2}$  mile maximum.
- 3. If D is  $1\frac{1}{2}"$  or less, no treatment is required.
- 4. Treatment allowed only when D is 3" or less.
- 5. If the slope is steeper than 1:4 (not to be steeper than 1:1), the R4-1 and WOT-1-06 signs shall be used as a supplement to the WB-11; this condition should never exceed 3 miles in length.



TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING DETAIL

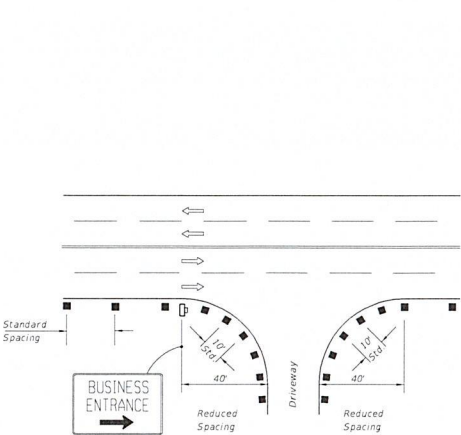
PEDESTRIAN WAY DROP-OFF CONDITION NOTES

- 1. A pedestrian way drop-off is defined as:
  - a. a drop in elevation greater than 10" that is closer than 2' from the edge of the pedestrian way
  - b. a slope steeper than 1:2 that begins closer than 2' from the edge of the pedestrian way when the total drop-off is greater than 60"
- 2. Protect any drop-off adjacent to a pedestrian way with pedestrian longitudinal channelizing devices, temporary barrier wall, or approved handrail.

DROP-OFFS IN WORK ZONES

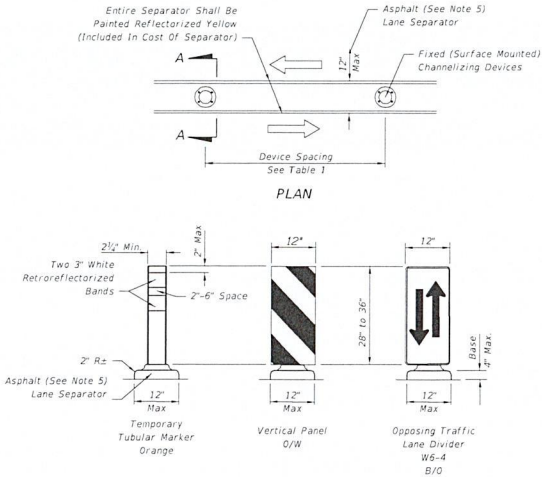
LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-600	SHEET 8 of 11
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1. For single business entrances, place one 24" x 36" business sign for each driveway entrance affected. Signs shall show specific business names. Logos may be provided by business owners. Standard BUSINESS ENTRANCE sign in Index 700-102 may be used when approved by the Engineer.
2. When several businesses share a common driveway entrance, place one 24" x 36" standard BUSINESS ENTRANCE sign in accordance with Index 700-102 at the common driveway entrance.
3. Channelizing devices shall be placed at a reduced spacing on each side of the driveway entrance, but shall not restrict sight distance for the driveway users.
4. Business entrance signs are intended to guide motorist to business entrances moved/modified or disturbed during construction projects. Business entrance signs are not required where there is minimal disruption to business driveways which is often the case with resurfacing type projects.

PLACEMENT OF BUSINESS ENTRANCE SIGNS AND CHANNELIZING DEVICES AT BUSINESS ENTRANCE



FIXED (SURFACE MOUNTED) CHANNELIZING DEVICES SECTION A-A

1. Temporary lane separators shall be supplemented with any of the following approved fixed (surface mounted) channelizing devices: temporary tubular markers, vertical panels, or opposing traffic lane divider panels. Opposing traffic lane divider panels (86-4) shall only be used as center lane dividers to separate opposing vehicular traffic on a two-lane, two-way operation. Temporary Tubular Markers, Vertical Panels and Opposing Traffic Lane Divider panels shall not be intermixed within the limits where the temporary lane separator is used. The connection between the channelizing device and the temporary lane separator curb shall hold the channelizing device in a vertical position.
2. ReflectORIZED materials shall have a smooth sealed outer surface which will display the same approximate color day and night. Furnish channelizing devices having retroreflective sheeting meeting the requirements of Section 990.
3. 12" openings for drainage shall be constructed in the asphalt and portable temporary lane separator at a maximum spacing of 25' in areas with grades of 1% or less or 50' in areas with grades over 1% as directed by the Engineer.
4. Tapered ends shall be used at the beginning and end of each run of the temporary lane separator to form a gradual increase in height from the pavement level to the top of the temporary lane separator.
5. The Contractor has the option of using portable temporary lane separators containing fixed channelizing devices in lieu of the temporary asphalt separator and channelizing devices detailed on this sheet. The portable temporary lane separator shall come in portable sections that can be connected to maintain continuous alignment between the separate curb sections. Each temporary lane separator section shall be 36 inches to 48 inches in total length. Portable temporary lane separators shall duplicate the color of the pavement marking. Portable temporary lane separators shall be one of those listed on the Approved Products List.

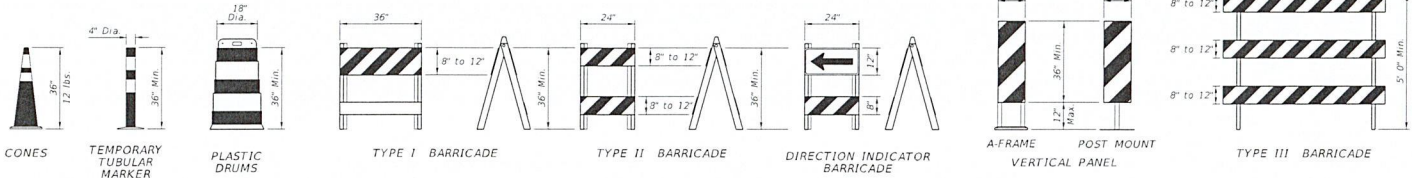
TEMPORARY LANE SEPARATOR

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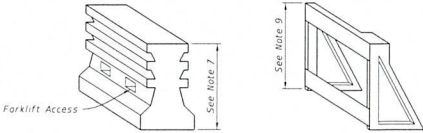
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CHANNELIZING DEVICES

CHANNELIZING DEVICE NOTES:

- The details shown on this sheet are for the following purposes:
  - For ease of identification and
  - 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.
- No sign panel should be mounted on any channelizing device unless the channelizing device/sign combination was found to be crashworthy and the sign panel is mounted in accordance with the vendor drawing for the channelizing device shown on the Approved Products List (APL).
- Ballast 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 tapers and 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 channelizing devices or MDT 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.
  - Be reflectorized as per the MUTCD with Department-approved reflective collars when used at night.
- For pedestrian longitudinal channelizing devices, the device shall have a minimum of 8" continuous detectable edging above the walkway. A gap not exceeding a height of 2" is allowed to facilitate drainage. The top surface of the device shall be a minimum height of 32" and have a 1/4" or less difference in any plane at all connection points between the devices to facilitate hand trailing. The bottom and the top surface of the device shall be in the same vertical plane. If pedestrian drop-off protection is required, the device shall have a footprint or offset of at least 2', otherwise the device must be at least 42" in height above the walkway and be anchored or ballasted to withstand a 200 lb lateral point load at the top of the device.



PEDESTRIAN LONGITUDINAL CHANNELIZING DEVICES

TEMPORARY BARRIER NOTES:

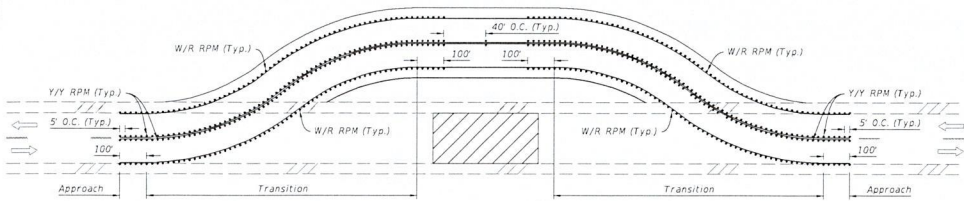
- Where a barrier is specified, any of the types below may be used in accordance with the applicable Index:

Index	Description
102-100	Temporary Barrier
102-120	Low Profile Barrier
536-001	Guardrail
- Trailer Mounted Barriers may be used to provide positive protection for workers within the work areas. APL drawings may be used as a guide to develop project specific Temporary Traffic Control Plans that are signed and sealed by the Contractor's Engineer.

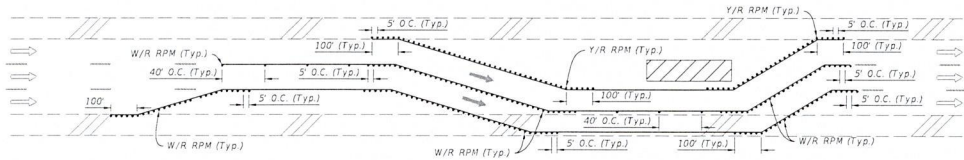
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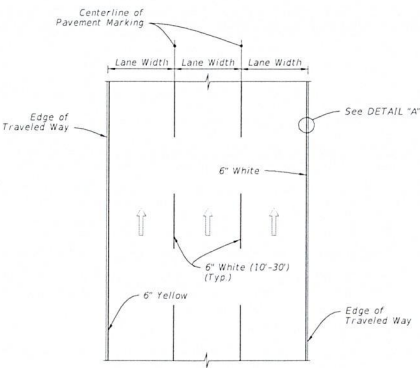
RPM PLACEMENT ON TWO-LANE ROADWAYS



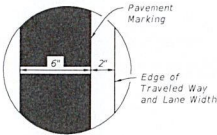
RPM PLACEMENT ON MULTILANE ROADWAYS  
(Lane Shift Shown, Other Multilane Typical Applications Similar)

- NOTES:**
1. Install RPMs as a supplement to:
    - a. All lane lines
    - b. Edge lines in transitions (e.g., merges, diversions, lane shifts)
    - c. Edge lines of gore areas
  2. Extend pavement marking and 5' RPM spacing by 100' in each direction for all transitions regardless of the line type.
  3. Place RPMs in accordance with this detail and Index 706-001.

- SYMBOLS:**
- Work Area
  - Lane Identification and Direction of Traffic



PLAN VIEW



DETAIL "A"

RPM PLACEMENT IN WORK ZONES

PAVEMENT MARKINGS PLACEMENT

WORK ZONE PAVEMENT MARKINGS

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