ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

(Please provide all information – Incomplete forms will be returned)

Contact Information:

Date: July 10, 2019
Originator: **Ed Cashman**
Phone: (850) 414-4314
Email: edward.cashman@dot.state.fl.us

Standard Plans:

Index Number: **102 Series**
Sheet Number (s): All
Index Title:

Summary of the changes:

Redeveloped the 102 Series.

Commentary / Background:

See Note to Reviewers on page 2.

Other Affected Offices / Documents: (Provide name of responsible personnel)

Yes	No		
☑	☐	Other Standard Plans –	Derwood Sheppard
☑	☐	FDOT Design Manual –	Gevin McDaniel
☑	☐	Basis of Estimates Manual –	Melissa Hollis
☑	☐	Standard Specifications –	Stefanie Maxwell
☑	☐	Approved Product List –	Karen Byram
☑	☐	Construction –	Daniel Strickland
☑	☐	Maintenance –	Kristin McCrary

Origination Package Includes: (Email or hand deliver package to Derwood Sheppard)

Yes	N/A	
☑	☐	Redline Mark-ups
☐	☐	Proposed Standard Plan Instructions (SPI)
☐	☐	Revised SPI
☐	☐	Other Support Documents

Implementation:

☐ Design Bulletin (Interim) ☐ DCE Memo ☐ Program Mgmt. Bulletin ☑ FY-Standard Plans (Next Release)

Contact the Roadway Design Office for assistance in completing this form

Temporary Traffic Control Document Changes

Work zone safety is currently an emphasis area of the Strategic Highway Safety Plan. In 2016, Florida ranks second for work zone crashes and fatalities. Accompanying this document are proposed changes to the Standard Plans, Standard Specifications, and FDOT Design Manual. Regarding this effort, there are two primary goals:

1) To clarify roles by placing information in the proper document
2) To improve the quality of temporary traffic control plans

Currently, the Standard Plans (especially Index 102-600) contain a mixture of material, design, and construction specifications. Some of this information is contradictory and duplicated. In the absence of a temporary traffic control plan, contractors are being asked to fill in the gaps. By putting information in the proper document, the correct person will be performing the assignment.

For larger projects, temporary traffic control plans tend to be of sufficient quality. However, smaller projects (e.g., milling and resurfacing jobs) may have an insufficient plan or no plan at all. This becomes very noticeable when looking at pedestrian accommodations in work zones.

In conclusion, the proposed changes more appropriately distribute the information and provide additional requirements for temporary traffic control plans. This is intended to improve work zone safety for all users.

Revised.

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1	General Notes
2	Definitions Temporary Traffic Control Devices Pedestrian and Bicyclist Overhead Work Railroads Sight Distance Above Ground Hazard
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7	Commonly Used Warning and Regulatory Signs In Work Zones
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10	Business Entrance Temporary Asphalt Separator
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GENERAL NOTES:

1. All projects and works on highways, roads and streets shall have a traffic control plan. All work shall be executed under the established plan and Department-approved procedures. 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.

Moved to 102-5

2. Indexes 102-601 through 102-670 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 shall comply with Section 335.15, F.S.

Added Temporary Traffic Control Tables

10/25/2018 8:44:35 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-000 ~~102-600~~	SHEET 8 1 of ~~12~~
11/01/17							

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 runout 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.

FDM 240

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.

Spec 102-5

TEMPORARY TRAFFIC CONTROL DEVICES

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.

Spec 102-9

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.

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.

PEDESTRIAN AND BICYCLIST

Spec 102-5

When an existing pedestrian way or bicycle way is located within a traffic control work zone, accommodation must be maintained and provision for the disabled must be provided.

Only approved pedestrian longitudinal channelizing devices may be used to delineate a temporary traffic control zone pedestrian walkway.

Standard Plan 102-075

Advanced notification of sidewalk closures and marked detours shall be provided by appropriate signs.

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 a 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.

Spec 102-5

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.

Spec 7-11

SIGHT DISTANCE

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.

FDM 240

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

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.

For aboveground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

Spec 102-5

Added Drop-Offs

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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.

Spec 1-3

Sheet 1

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

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.

MINIMUM RADII FOR NORMAL CROWN	
WORK ZONE POSTED SPEED	MINIMUM RADIUS
MPH	feet
70	4090
65	3130
60	2400
55	1840
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii is Used	

FDM 240.2.2

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.

Spec 102-5

Spec 102-3

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.

Spec 102-5

LANE WIDTHS

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. The minimum widths for work zone travel lanes shall be 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 freeways; 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.

Spec 102-5

REGULATORY SPEEDS IN WORK ZONES

Traffic Control Plans (TCP's) for all projects must include specific regulatory speeds for each phase of work. This can either be the posted speed or a reduced speed. The speed shall be noted in the TCPs; this includes indicating the existing speed if no reduction is to be made. Regulatory speeds are to be uniformly established through each phase.

In general, the regulatory speed should be established to route vehicles safely through the work zone as close as to normal highway speed as possible. The regulatory speed should not be reduced more than 10 mph below the posted speed and never below the minimum statutory speed for the class of facility. When a speed reduction greater than 10 mph is imposed, the reduction is to be done in 10 mph per 500' increments.

Temporary regulatory speed signs shall be removed 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 unless new speed limit signing is provided for in the plans.

On projects with interspaced work activities, speed reductions should be located in proximity to those activities which merit a reduced speed, and not "blanketed" for the entire project. At the departure of such activities, the normal highway speed should be posted to give the motorist notice that normal speed can be resumed.

If the existing regulatory speed is to be used, consideration should be given to supplementing the existing signs when the construction work zone is between existing regulatory speed signs. For projects where the reduced speed conditions exist for greater than 1 mile in rural areas (non-interstate) and on rural or urban interstate, additional regulatory speed signs are to be placed at no more than 1 mile intervals. Engineering judgement should be used in placement of the additional signs. Locating these signs beyond ramp entrances and beyond major intersections are examples of proper placement. For urban situations (non-interstate), additional speed signs are to be placed at a maximum of 1000' apart.

When field conditions warrant speed reductions different from those shown in the TCP the contractor may submit to the project engineer for approval by the Department, a signed and sealed study to justify the need for further reducing the posted speed, or, the engineer may request the District Traffic Operations Engineer (DTOE) to investigate the need. It will not be necessary for the DTOE to issue regulations for regulatory speeds in work zones due to the revised provisions of F.S. 316.07451(2) (b). Advisory Speed plates will be used at the option of the field engineer for temporary use while processing a request to change the regulatory speed specified in the plans when deemed necessary. Advisory speed plates cannot be used alone but must be placed below the construction warning sign for which the advisory speed is required.

For additional information, refer to the FDOT Design Manual 240.

FDM 240.2.2 and Spec102-5

Added Business Sign Detail
Added Speed Reduction Signing Detail
Added Motorist Awareness System

Spec 102-5

FLAGGER CONTROL

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

Specs 102-5 and 990-17

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

Spec 102-5

Flagger stations shall be located far enough in advance of the work space so that approaching road users will have sufficient distance to stop before entering the work space. 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 info in Survey and Mapping HB and Survey Safety HB

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.

(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

Spec 102-9

SIGN MATERIALS

Mesh signs and non-retroreflectice vinyl signs may only be used for daylight operations. Non-retroreflectice 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

Spec 102-5

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.

Spec 8-4

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.

Spec 102-9

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 advanced 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 Advanced 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.

SPEEDING FINES DOUBLED WHEN WORKERS PRESENT SIGN

The SPEEDING FINES DOUBLED WHEN WORKERS PRESENT sign should be installed on all projects, but may be omitted if the work operation is less than 1 day. The placement should be 500 feet beyond the ROAD WORK AHEAD sign or midway to the next sign whichever is less.

Covered throughout 102 series

GROOVED PAVEMENT AHEAD SIGN

Spec 102-5

The GROOVED PAVEMENT AHEAD sign is required 500 feet in advance of a milled or grooved surface open to traffic. The W8-15P 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.

Covered throughout 102 series

PROJECT INFORMATION SIGN

The Project information sign shall be installed when called for in the plans.

No longer required

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Spec 102-9

TEMPORARY SIGN SUPPORT NOTES:

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 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.

Spec 102-9

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).~~

Spec 102-9

3. ~~Use only approved systems listed on the Department's Approved Products List (APL).~~

Spec 990

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.~~

Spec 990

5. Provide 3 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.43 in^3 for 60 ksi steel, a minimum section modulus of 0.37 in^3 for 70 ksi steel, or a minimum section modulus of 0.34 in^3 for 80 ksi steel.

6. Provide 4 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.56 in^3 for 60 ksi steel, or a minimum section modulus of 0.47 in^3 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. For diamond warning signs with supplement plaque (up to 5 ft^2 in area), use 4 lb/ft posts for up to 10 ft Clear Height (measure to the bottom of diamond warning sign).

Spec 990-8

10. Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.

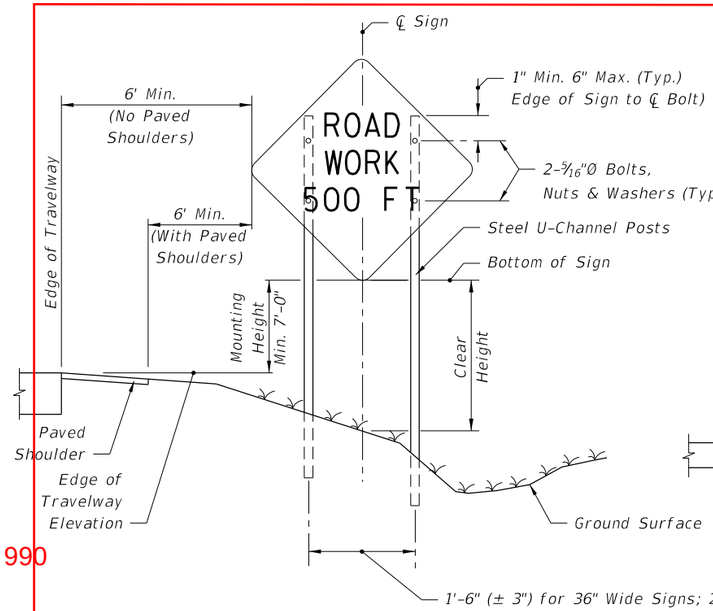
11. ~~The contractor may install 3 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.~~

Spec 990-8

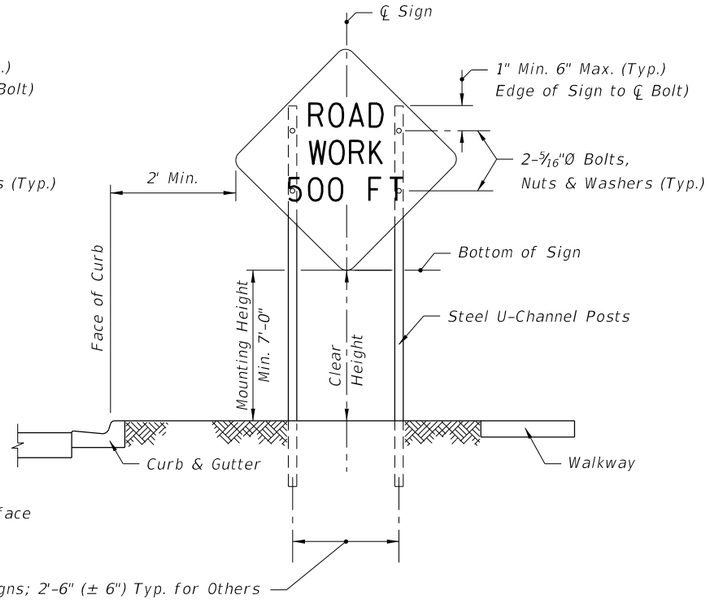
Spec 102-9

12. Install all posts plumb.

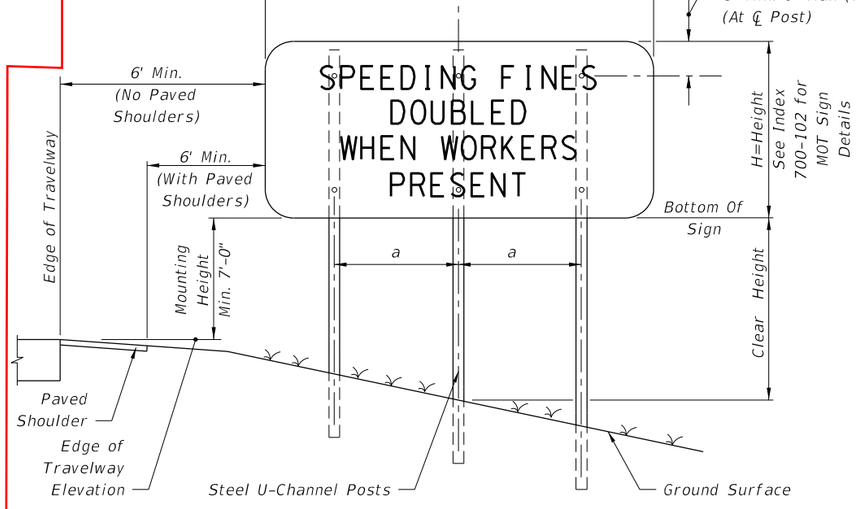
13. The contractor may set posts in preformed holes to the specified depth with suitable backfill tamped securely on all sides, or drive 3 lb/ft sign posts and any size base post in accordance with the manufacturer's detail shown on the APL.



2 POST SIGN SUPPORT MOUNTING DETAILS
(SINGLE POST SIMILAR)
RURAL



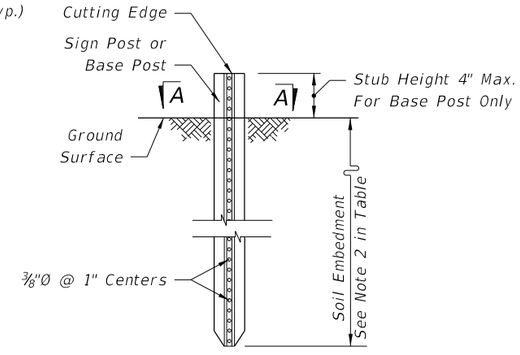
2 POST SIGN SUPPORT MOUNTING DETAILS
(SINGLE POST SIMILAR)
URBAN



3 POST SIGN SUPPORT MOUNTING DETAILS

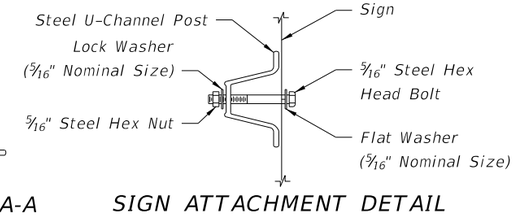
Where W = 48": a = 1' - 4½" (± 1")
W = 60": a = 1' - 9" (± 1")
W = 72": a = 2' - 1" (± 1")

SECTION A-A
(SCHEMATIC)



TYPICAL FOUNDATION DETAIL

See APL for post, splice and connection details.
No bolts installed closer than 1" to cutting edge.



SIGN ATTACHMENT DETAIL
(WITHOUT Z-BRACKET)

POST AND FOUNDATION TABLE FOR WORK ZONE SIGNS

SIGN SHAPE	SIGN SIZE (inches)	NUMBER OF STEEL U CHANNEL POSTS
Octagon	30x30	1
Triangle	36x36x36	1
	48x48x48	1
	60x60x60	2
Rectangle (W x H)	24x18	1
	24x30	1
	30x24	1
	36x18	1
	36x24	1
	48x18	1
	48x24	1
	36x48	2
	48x30	2
	48x36	2
	54x36	2
	48x60	3
	60x54	3
	72x48	3
	120x60*	4*
Square	30x30	1
	36x36	2
	48x48	2
Diamond (See Note 7)	48x48	2
Circle	360	2

Notes For Table:

1. Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.

* Use 4 lb/ft U-channel sign post with a mounting height of 7' min. and 8' max. Attach sign panel using Z-bracket detail on Sheet 6.

2. Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.

3. 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.

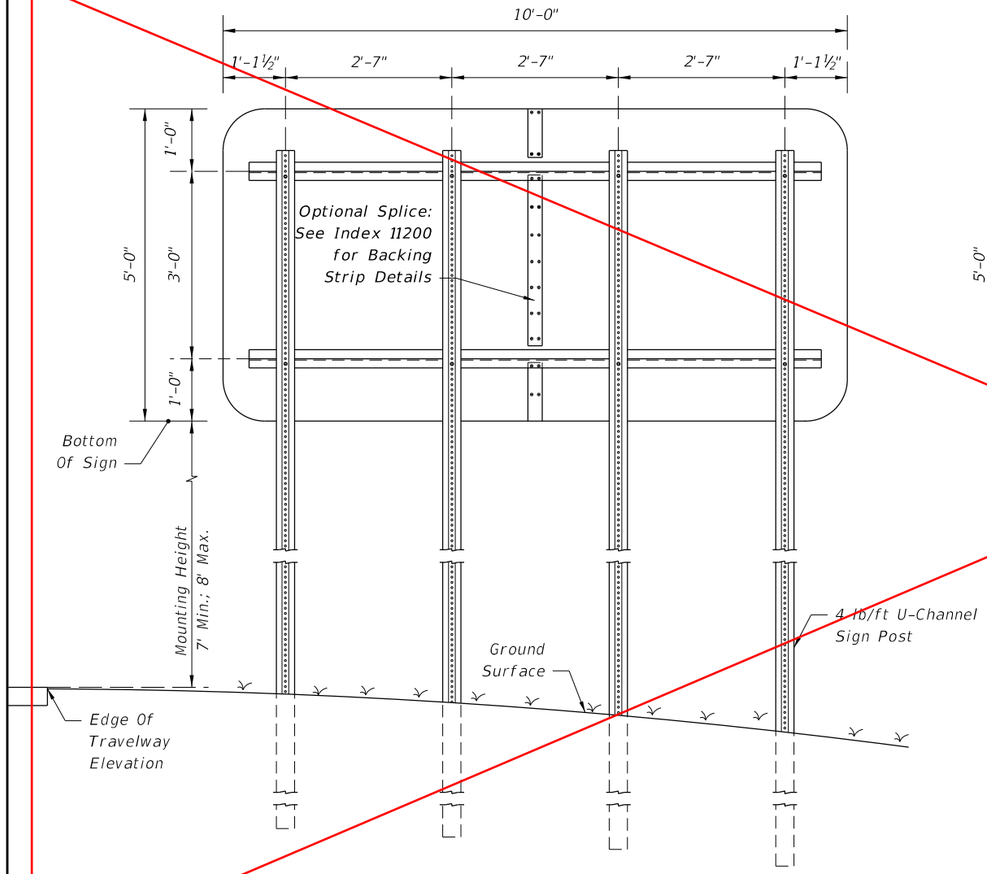
4. The soil plate as shown on the APL vendor drawing is not required for base posts or sign posts installed in existing rock (as defined in Note 3), asphalt roadway, shoulder pavement or soil under sidewalk.

Project Information Signs

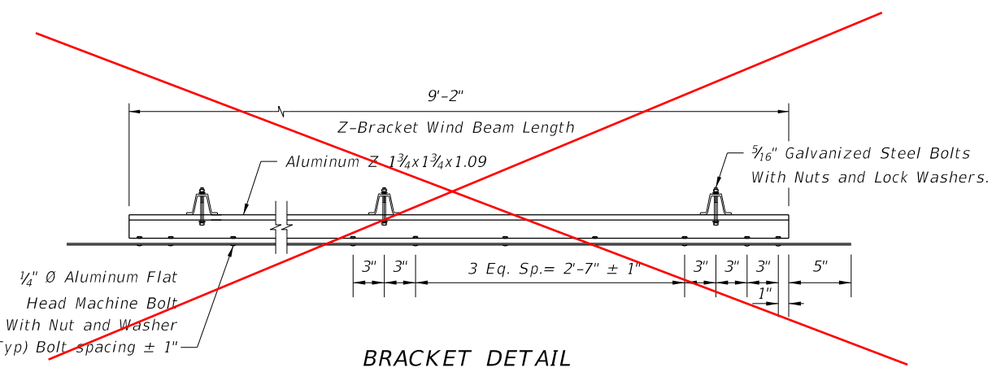
~~WORK ZONE SIGN SUPPORTS~~

Sheet 4

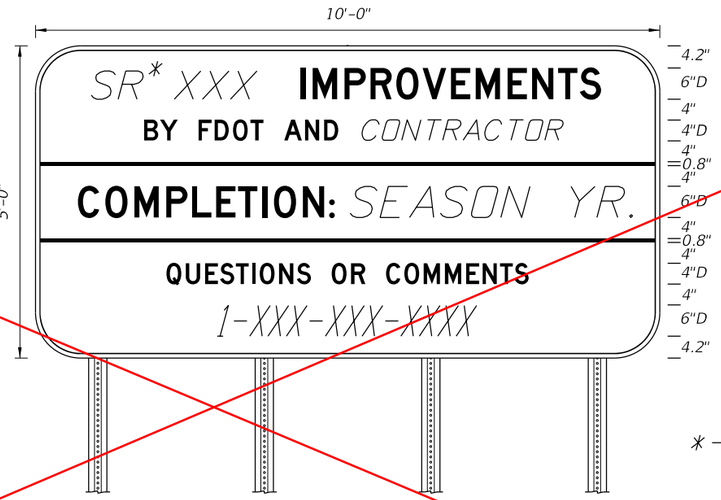
10/25/2018 8:44:37 AM



4 POST SIGN SUPPORT MOUNTING DETAIL



BRACKET DETAIL

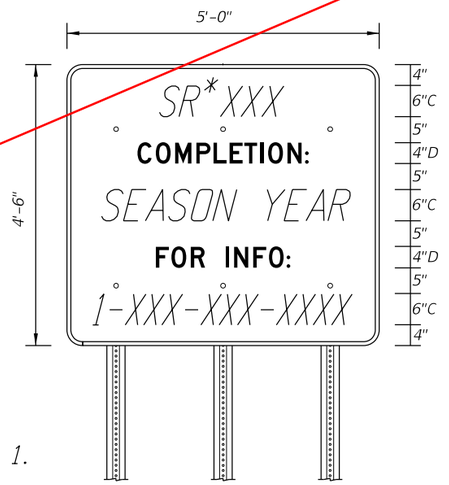


*-See Note 1.

BORDER	10'-0"x 5'-0"
R=8"	8" Radii
TH=0.25"	4" and 6" series D Legend
IN=0.75"	Blue Background
	White Legend and Border

PROJECT INFORMATION SIGN DETAIL
50 MPH OR GREATER

Use SIGN ATTACHMENT DETAIL
(WITH Z-BRACKET).

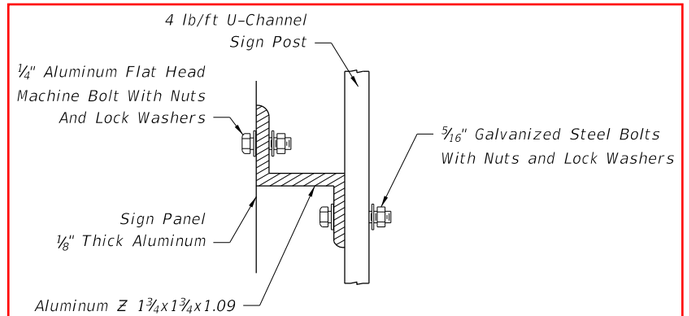


BORDER	5'-0"x 4-6"
R=3"	3" Radii
TH=0.25"	4" series D Legend and
IN=0.75"	6" series C Legend
	Blue Background
	White Legend and Border

PROJECT INFORMATION SIGN DETAIL
45 MPH OR LESS

Use SIGN ATTACHMENT DETAIL
(WITHOUT Z-BRACKET)
On Sheet 5.

Sheet 4



SIGN ATTACHMENT DETAIL
(WITH Z-BRACKET)

PROJECT INFORMATION SIGN NOTES:

1. Road designation should be the most common designation (i.e. I-Interstate, SR-State Road or US.)
2. Italic text on signs indicate variable information specific to the project.
3. See Sheet 5 for Typical Foundation Details and Post and Foundations Table.

Added RPM Placement in Work Zones Detail
Added Placement of Pavement Markings Detail

Work Zone Pavement Markings
~~PROJECT INFORMATION SIGN~~

10/25/2018 8:44:38 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-000 ~~102-600~~	SHEET 8 6 of ~~12~~
11/01/17							

Deleted Existing Information
Added Temporary Raised Rumble Strips

E5-2
B/0

E5-2a
B/0

G20-1
B/0

G20-2
B/0

G20-4
B/0

M4-8
B/0

M4-8A
B/0

M4-9L
B/0

M4-9R
B/0

M4-10L
O/B

M4-10R
O/B


OM-3R
B/Y

R1-1
W/R

R1-2
RW/R

R2-1
B/W

R4-1
B/W

R4-2
B/W

R4-5
B/W


R4-7
B/W


R4-8
B/W

R4-7AL
B/W

R4-7AR
B/W

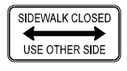
R4-7BL
B/W

R4-7BR
B/W

R5-1
WR/W

R9-8
B/W

R9-9
B/W



R9-10
B/W

R9-11
B/W

R9-11a
B/W

R11-2
B/W


W1-1R
B/0


W1-2R
B/0


W1-3R
B/0


W1-4R
B/0


W1-4b
B/0


W1-4c
B/0


W1-6
B/0


W1-7
B/0


W1-8
B/0

W3-1
RB/O

W3-2
RB/O

W3-3
B(RYG)/0

W3-4
B/0

W3-5
B/0

W4-1
B/0

W4-2
B/0

W5-1
B/0

W5-2
B/0

W5-3
B/0

W6-1
B/0

W6-2
B/0

W6-3
B/0

W8-1
B/0

W8-2
B/0

W8-3
B/0

W8-4
B/0

W8-5
B/0

W8-6
B/0

W8-7
B/0

W8-8
B/0

W8-9
B/0

W8-9a
B/0

W8-15P
B/0

W8-11
B/0

W9-1L
B/0

W9-1R
B/0

W9-2L
B/0

W9-2R
B/0

W10-1
B/Y

W11-2
B/0

W12-1
B/0

W12-2
B/0

W13-1
B/0

W20-1A
B/0

W20-1B
B/0

W20-1C
B/0

W20-1D
B/0

W20-1E
B/0

W20-1F
B/0

W20-2A
B/0

W20-2B
B/0

W20-2C
B/0

W20-2D
B/0

W20-2E
B/0

W16-7P
B/0

W20-3
B/0

W20-4
B/0

W20-5a
B/0

W20-5L
B/0

W20-5R
B/0

W20-5C
B/0

W20-7A
B/0

W20-7
B/0

W21-1A
B/0

W21-1
B/0

W21-5
B/0

W21-5a
B/0

W21-6
B/0

W21-7
B/0

W16-2P
B/0

W22-1
B/0

W22-2
B/0

W22-3
B/0

COLOR CODES
Legend and/or Symbol Background

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

MOT-1-06
B/0

MOT-4-06
B/0

MOT-5-06
MOT-6-06
B/0

MOT-7-06
B/0

MOT-8-06
B/0

MOT-9-06
B/0

MOT-10-06
B/0

MOT-11-06
BLUE/W

MOT-12-06R
B/W

MOT-12-06L
B/W

MOT-13-06
(Limited access facilities)
MOT-14-06
(All other facilities)

MOT-15-06
B/0

W8-15P
B/0

MOT-16-06
B/0

MOT-17-06
B/0

MOT-18-10
B/0

Notes:

Spec 102-9

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.

COMMONLY USED WARNING AND REGULATORY SIGNS IN WORK ZONES

8:44:40 AM
10/25/2018

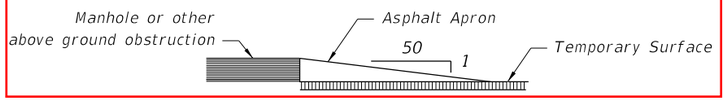
LAST REVISION 11/01/17	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-000 ~~102-600~~	SHEET 8 7 of ~~12~~

MANHOLES/CROSSWALKS/JOINTS

Sheet 2

Manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than ¼" shall have a temporary asphalt apron constructed as shown in the diagram below.

All transverse joints that have a difference in elevation of 1" 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.

REMOVING PAVEMENT MARKINGS

Spec 102-5

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. Remove conflicting pavement marking using a method that will not damage the surface texture of the pavement, unless the pavement will be restored prior to traffic use. Painting over existing pavement markings with black paint or spraying with asphalt shall not be accepted as substitute for removal or obliteration. Full pavement width overlays of either a structural or friction course (non-final surface) are an acceptable alternate means to achieve removal.

SIGNALS

Spec 102-9

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.

Covered in 102 series and MUTCD

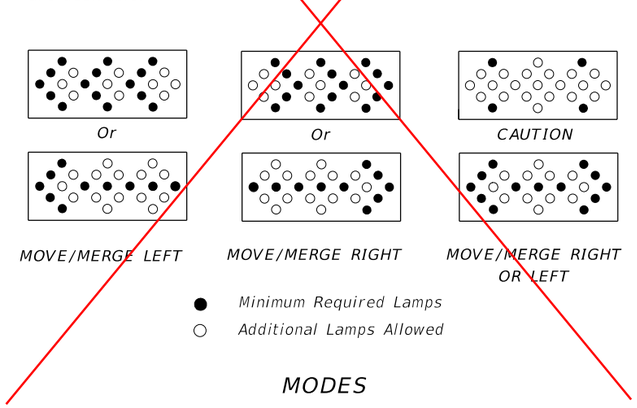
ADVANCE WARNING ARROW BOARDS

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.



FDM 240

PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

The PCMS can be used to:

1. Supplement 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 work zone conflicts or 0.5 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 Design Manual 240.

SP 102-015

TRUCK/TRAILER-MOUNTED ATTENUATORS

Truck/Trailer-mounted attenuators (TMA) can be used for moving operations and short-term stationary operations. For moving operations, see Indexes 102-607 and 102-619. For short-term, stationary operations, see Part VI of the MUTCD.

Spec 102-9

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.

Spec 102-9.5

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.

Added Temporary Traffic Control Devices

All Items on Sheet 2

DROP-OFF CONDITION NOTES

1. These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.

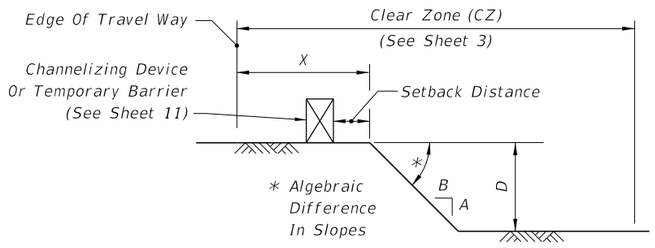
2. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required (See Table 1). A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slope (A:B) steeper than 1:4. In superelevated sections, 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 Specification 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, LSD. 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 1, any drop-off condition that is created and restored within the same work period will not be subject to the use of temporary barriers; however, channelizing devices will be required.

6. When permanent curb heights are ≥ 6", no channelizing device will be required. For curb heights < 6", see Table 1.



DROP-OFF CONDITION DETAIL

Table 1
Drop-off Protection Requirements

Condition	X (ft)	D (in.)	Device Required
1	2X-12	> 3	Temporary Barrier
2	> 12-CZ	> 3 to ≤ 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

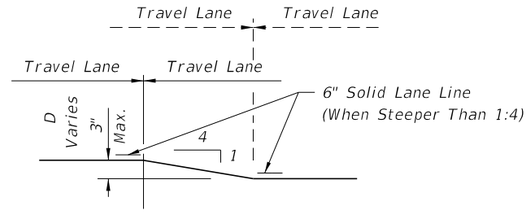
1. This treatment applies to resurfacing or milling operations between adjacent travel lanes.

2. Whenever there is a difference in elevation between adjacent travel lanes, the W8-11 sign with "UNEVEN LANES" is required at intervals of ½ mile maximum.

3. If D is 1½" 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 MOT-1-06 signs shall be used as a supplement to the W8-11; 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

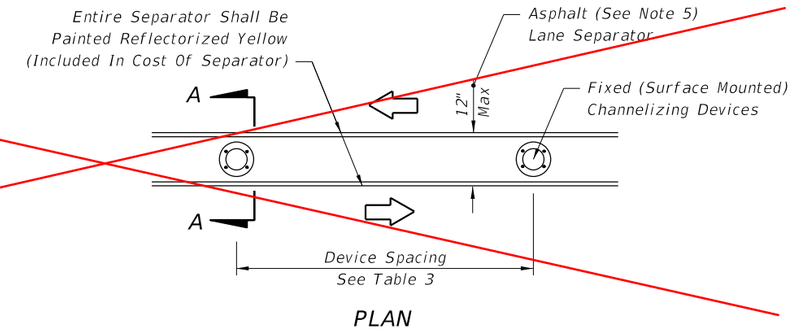
   b. a slope steeper than 1:2 that begins closer than 2' from the edge of the pedestrian way when the total drop-off is greater than 60"

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

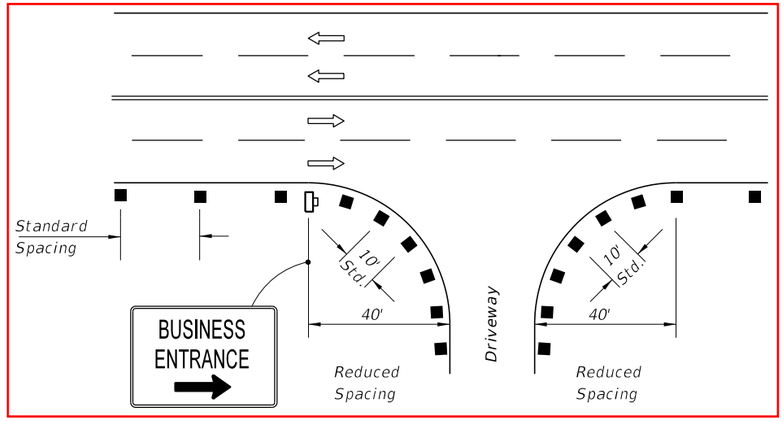
1/8/2019 6:41:18 AM

Table 3 Device Spacing				
Speed (mph)	Max. Distance Between Devices (ft.)			
	Tubular Markers		Vertical Panels or Opposing Traffic Lane Divider	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100



PLAN

Sheet 3



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.

Sheet 3

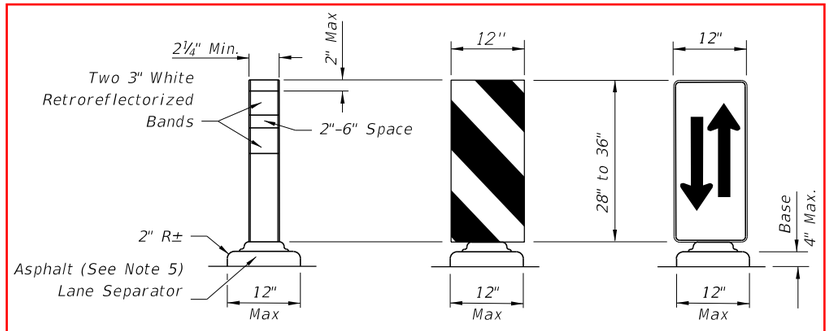
3. Channelizing devices shall be placed at a reduced spacing on each side of the driveway entrance, but shall not restrict sight distance for the driveway users.

Sheet 3

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

Sheet 8



FIXED (SURFACE MOUNTED) CHANNELIZING DEVICES

SECTION AA

1. Temporary lane separators shall be supplemented with any of the following approved fixed (surface mounted) channelizing devices: tubular markers, vertical panels, or opposing traffic lane divider panels. Opposing traffic lane divider panels (W6-4) shall only be used as center lane dividers to separate opposing vehicular traffic on a two-lane, two-way operation. 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.

Spec 102-9

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.

Specs 102-9 and 990-17

6. Any damage to existing pavement caused by the removal of temporary lane separator shall be satisfactorily repaired and the cost of such repairs are to be included in the cost of Maintenance of Traffic, LS.

Specs 102-9 and 102-11

TEMPORARY LANE SEPARATOR

10/25/2018 8:44:42 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX	SHEET
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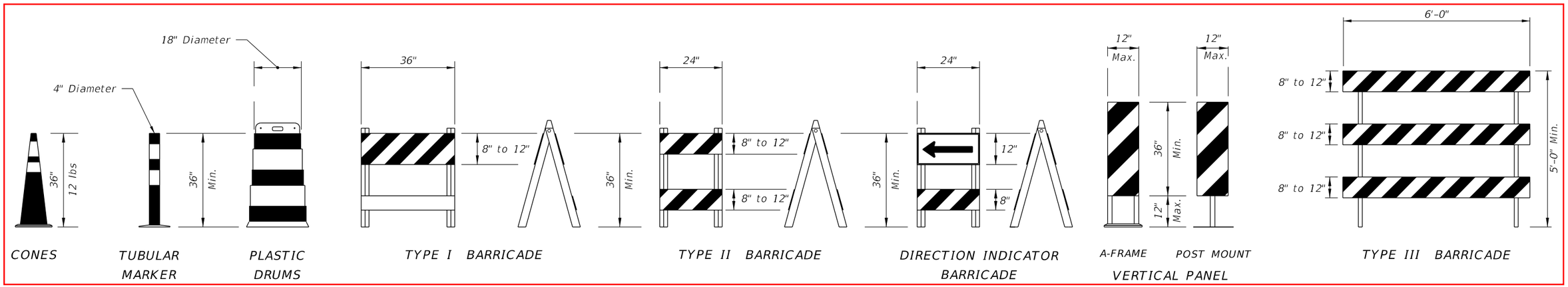


CONES | TUBULAR MARKER | PLASTIC DRUMS | TYPE I BARRICADE | TYPE II BARRICADE | DIRECTION INDICATOR BARRICADE | A-FRAME | POST MOUNT VERTICAL PANEL | TYPE III BARRICADE

TUBULAR NON-FIXED MARKER TO BE USED DURING DAYLIGHT ONLY

Spec 102-9

Sheet 8

CHANNELIZING DEVICES

CHANNELIZING DEVICE NOTES: Spec 102-9

1. 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.
2. 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.

Shown Above

3. 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).
4. Ballast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface. Spec 102-9
5. 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.
6. The splicing of sheeting is not permitted on either channelizing devices or MOT signs.
7. For rails less than 3'-0" long, 4" stripes shall be used. Spec 990-14
8. Cones shall:
   a. Be used only in active work zones where workers are present.
   b. Be reflectorized as per the MUTCD with Department-approved reflective collars when used at night.

Spec 102-9

9. Vehicular longitudinal channelizing devices shall not exceed 36" in height. For vehicular longitudinal channelizing devices (LCDs) less than 32" in height, the LCD shall be supplemented with approved fixed (surface mounted) channelizing devices (tubular markers, vertical panels, etc.) along the run of the LCD, at the ends, at 50' centers on tangents, and 25' centers on radii. The cost of the fixed supplemented channelizing devices shall be included in the cost of the LCD. LCDs less than 32" in height shall not be used for speeds greater than 45 mph.

Spec 990-15

10. 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 $\frac{1}{8}$" 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.
11. For Barrier Delineators, see Specification 102. Place on top of unit so that retroreflective sheeting faces vehicular traffic. Color must match adjacent longitudinal pavement marking.

Moved to 102-9

Moved to 102-9

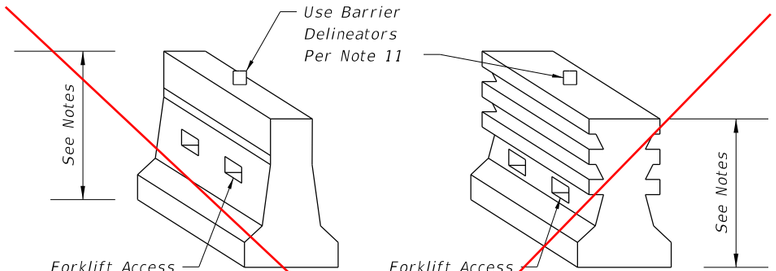
Sheet 8

TEMPORARY BARRIER NOTES:

1. 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

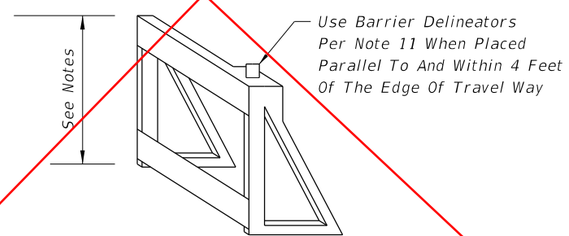
2. Trailer Mounted Barriers may be used to provide positive protection for workers within the work areas. APL drawings may be used as a guide to develop project specific Temporary Traffic Control Plans that are signed and sealed by the Contractor's Engineer.



Spec 102-9 and SP Index 102-100

VEHICULAR LCD

VEHICULAR/ PEDESTRIAN LCD



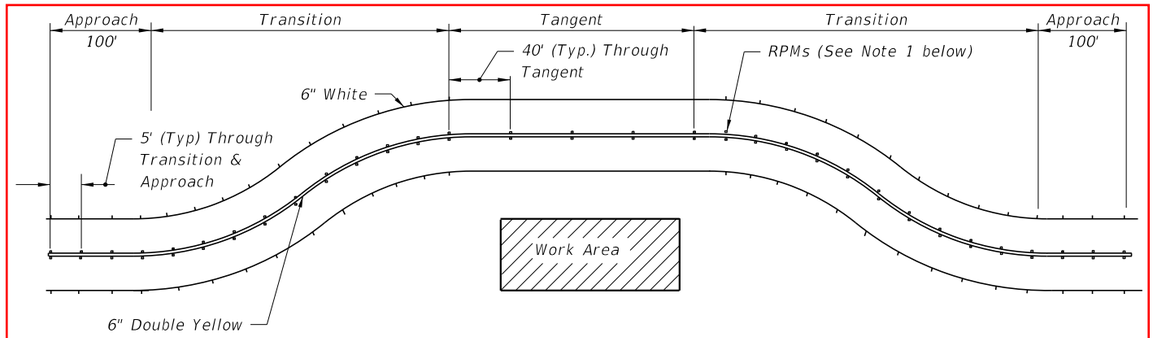
PEDESTRIAN LCD

LONGITUDINAL CHANNELIZING DEVICE

9:15:45 AM

1/30/2019

Sheet 6



USE OF RPMS TO SUPPLEMENT PAINT OR REMOVABLE TAPE IN WORK ZONES

1. RPMs shall be installed as a supplement to:
   a. All lane lines.
   b. Edge lines in transition & approach areas.
   c. Edge lines of gore areas.
2. Placement of RPMs should be as shown in Index 706-001 with the following exceptions:
   RPMs shall be placed at 5 feet center to center in approach and transition areas.

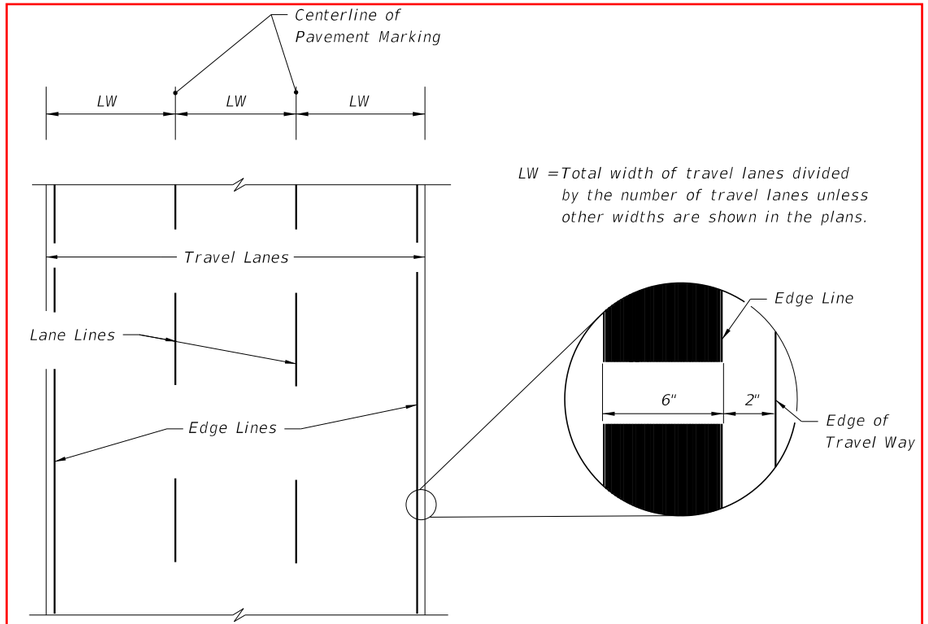
NOTES FOR RAISED PAVEMENT MARKERS:

1. The color of the raised pavement marker under both day and night conditions shall conform to the color of the marking for which they serve as a positioning guide, or for which they supplement.

2. RPMs used to supplement lane lines are to be paid for as Raised Pavement Marker (Temporary), EA. RPMs used as a temporary substitute for paint or removable tape due to equipment malfunction are to be placed at the Contractor's expense.

Covered in SP Index 706-001 and Spec 102

Sheet 6



LW = Total width of travel lanes divided by the number of travel lanes unless other widths are shown in the plans.

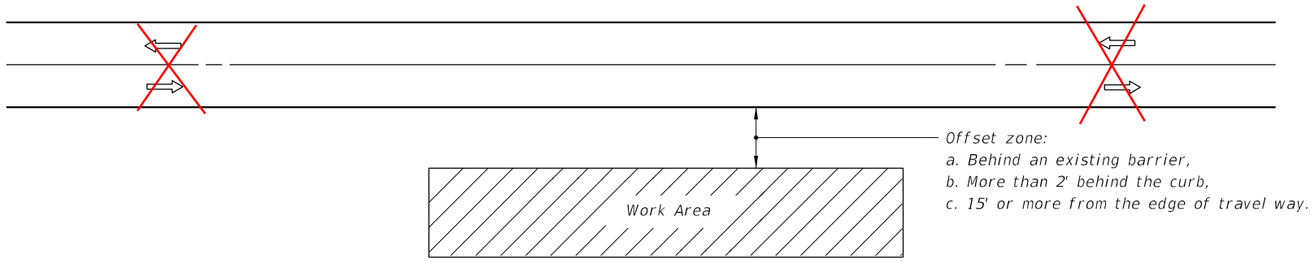
PLACEMENT OF PAVEMENT MARKINGS

10/25/2018 8:44:43 AM

PAVEMENT MARKINGS

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX	SHEET
11/01/17						102-600	12 of 12

COMBINED WITH INDEX 102-611.



SYMBOLS

Work Area

~~Lane Identification + Direction of Traffic~~

GENERAL NOTES

1. If the work operation (excluding establishing and terminating the work area) requires that two or more work vehicles cross the offset zone in any one hour, traffic control will be in conformance with Index 102-602.

~~2. No special signing is required.~~

~~3. When a side road intersects the highway within the work area, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.~~

~~4. When construction activities encroach on a sidewalk refer to Index 102-660.~~

~~5. For general TCZ requirements and additional information, refer to Index 102-600.~~

REVISED

ADDED NOTE 2.

CONDITIONS

~~WHERE ANY VEHICLE, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE BEHIND AN EXISTING BARRIER, MORE THAN 2' BEHIND THE CURB, OR 15' OR MORE FROM THE EDGE OF TRAVEL WAY.~~

WORK BEYOND THE SHOULDER

102-005

9/18/2018 10:22:06 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK OUTSIDE SHOULDER	INDEX	SHEET
11/01/17						102-601	1 of 1

COMBINED WITH INDEX 102-602.

REVISED.

ADDED DETAIL FOR ENCROACHMENT ON LOW-SPEED ROADWAYS.

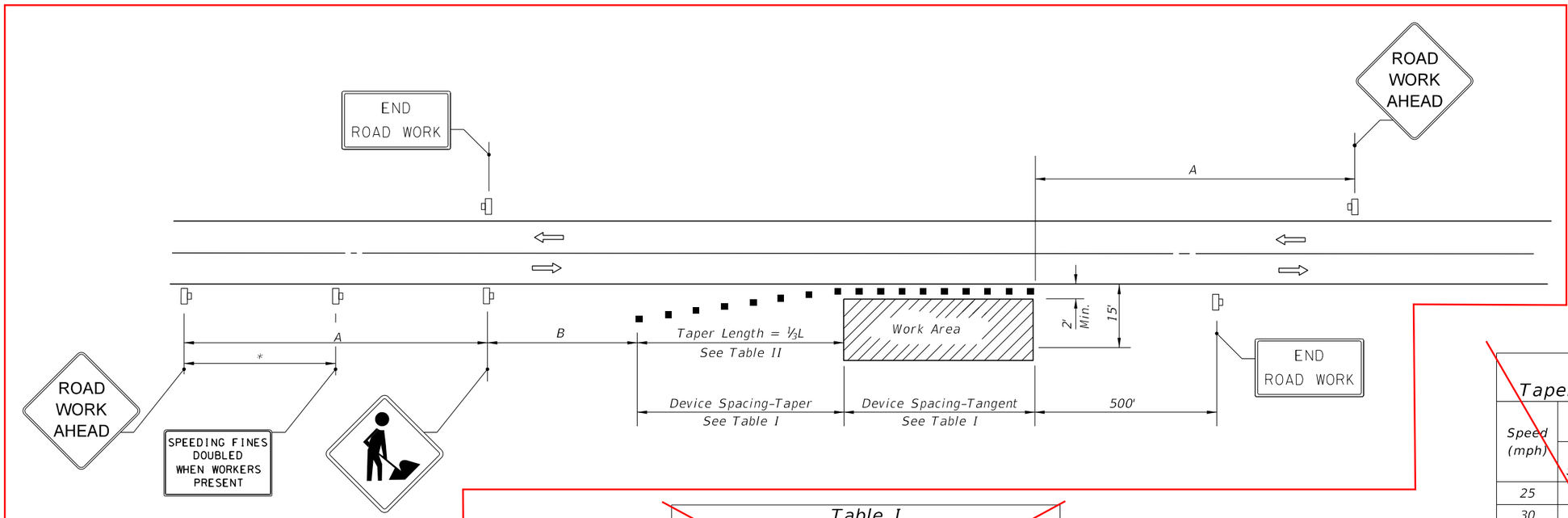


Table II
Taper Length - Shoulder

Speed (mph)	½L (ft) 8' Shldr.	10' Shldr.	12' Shldr.	Notes
25	28	35	42	$L=\frac{WS^2}{60}$
30	40	50	60	
35	55	68	82	
40	72	90	107	
45	120	150	180	L=WS
50	133	167	200	
55	147	183	220	
60	160	200	240	
65	173	217	260	
70	187	233	280	

8' minimum shoulder width

½L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

Table I
Device Spacing

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

DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.) A	B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

* Midway between signs.

SYMBOLS

- Work Area
- ■ Channelizing Device (See Index 102-600)
- Work Zone Sign
- ⇨ Lane Identification + Direction of Traffic

GENERAL NOTES

1. When four or more work vehicles enter the through traffic lanes in a one hour period or less (excluding establishing and terminating the work area), the advanced FLAGGER sign shall be substituted for the WORKERS sign. For location of flaggers and FLAGGER signs, see Index 102-603. Revised. See Note 3.
2. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign only on the side where the shoulder work is being performed.
3. ~~When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.~~
4. ~~For general TCZ requirements and additional information, refer to Index 102-600.~~

ADDED NEW NOTES 1, 2, 4, 5 & 6.

DURATION NOTES

1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

WORK ON THE SHOULDER

102-010

9/18/2018 10:22:44 AM

LAST REVISION 11/01/17	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK ON SHOULDER	INDEX 102-602	SHEET 1 of 1

SYMBOLS:

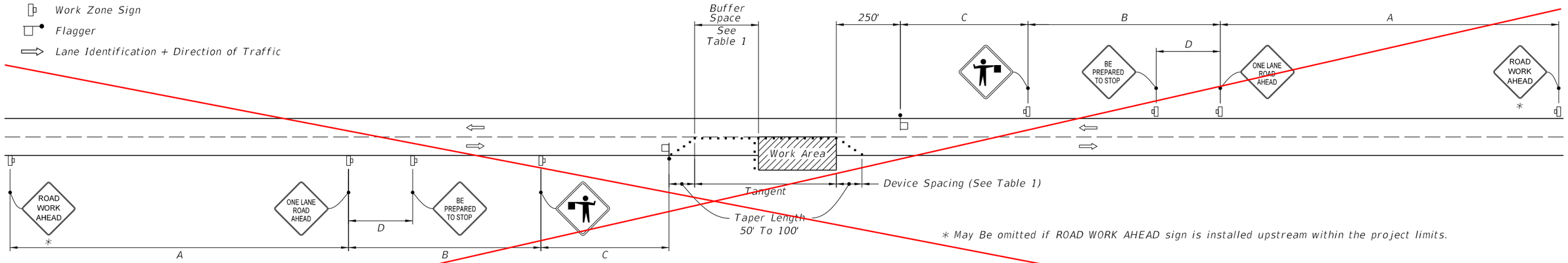
Work Area

Channelizing Device (See Index 102-600)

Work Zone Sign

Flagger

Lane Identification + Direction of Traffic



WITHOUT TEMPORARY RAISED RUMBLE STRIPS

GENERAL NOTES:

1. Special Conditions may be required in accordance with these notes and the following sheets:

   A. Railroad Crossings:
      a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 3.
      b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.
   B. If the Work Area encroaches on the Centerline, use the Layout for Temporary Lane Shift to Shoulder on Sheet 3 only if the Existing Paved Shoulder width is sufficient to provide for an 11' lane between the Work Area and the Edge of Existing Paved Shoulder. Reduce the posted speed when appropriate.

2. Temporary Raised Rumble Strips:

   A. Use when both of the following conditions are met concurrently:
      a. Existing Posted Speed is 55 mph or greater;
      b. Work duration is greater than 60 minutes.
   B. Use a consistent Strip color throughout the work zone.
   C. Place each Rumble Strip Set transversely across the lane at locations shown.
   D. Use Option 1 or Option 2 as shown on Sheet 2. Use only one option throughout work zone.

FDM

3. Additional one-way control may be provided by the following means:
   A. Flag-carrying vehicle;
   B. Official vehicle;
   C. Pilot vehicles;
   D. Traffic signals.

When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.

Spec 102-5.7

4. When a side road intersects the highway within the TTC zone, place additional TTC devices in accordance with other applicable TCZ Indexes.

5. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.

6. When Buffer Space cannot be attained due to geometric constraints, use the greatest attainable length, not less than 200 ft, for posted speeds greater than 25 mph.

7. ROAD WORK AHEAD and the BE PREPARED TO STOP signs may be omitted if all of the following conditions are met:

   A. Work operations are 60 minutes or less.
   B. Speed limit is 45 mph or less.
   C. There are no sight obstructions to vehicles approaching the work area for a distance equal to the Buffer Space shown in Table 1.
   D. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   E. Volume and complexity of the roadway has been considered.
   F. If a railroad crossing is present, vehicles will not queue across rail tracks.
   G. AFADs are not in use.

8. See Index 102-600 for general TCZ requirements and additional information.

9. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specifications Section 102, 990 and the APL vendor drawings.

Spec 102-9.18

ADDED NEW NOTES 1, 2, 3 & 4.

TABLE 1

Posted Speed	DEVICE SPACING: Maximum Spacing of Cones or Tubular Markers		Maximum Spacing of Type I or Type II Barricades/Panels/Drums		Distance Between Signs				Buffer Space
	On a Taper	On a Tangent	On a Taper	On a Tangent	A	B	C	D	
25	20'	50'	20'	50'	200'	200'	200'	100'	155'
30	20'	50'	20'	50'	200'	200'	200'	100'	200'
35	20'	50'	20'	50'	200'	200'	200'	100'	250'
40	20'	50'	20'	50'	200'	200'	200'	100'	305'
45	20'	50'	20'	50'	350'	350'	350'	175'	360'
50	20'	50'	20'	100'	500'	500'	500'	250'	425'
55	20'	50'	20'	100'	2640'	1500'	1000'	500'	495'
60	20'	50'	20'	100'	2640'	1500'	1000'	500'	570'
65	20'	50'	20'	100'	2640'	1500'	1000'	500'	645'
70	20'	50'	20'	100'	2640'	1500'	1000'	500'	730'

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA BETWEEN THE CENTERLINE AND A LINE 2' OUTSIDE THE EDGE OF TRAVEL WAY.

TWO-LANE ROAD, LANE CLOSURE USING FLAGGERS

102-025

9/18/2018 10:24:22 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 1 of 3

SYMBOLS:

- *Work Area*
- *Channelizing Device (See Index 102-600)*
- *Work Zone Sign*
- *Flagger*
- *Lane Identification + Direction of Traffic*

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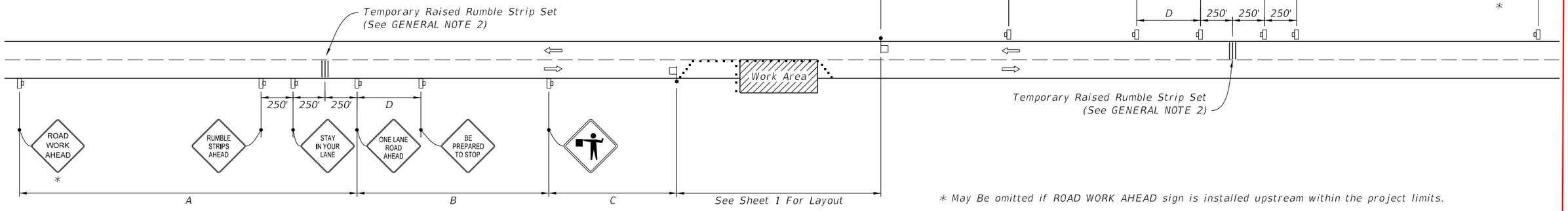
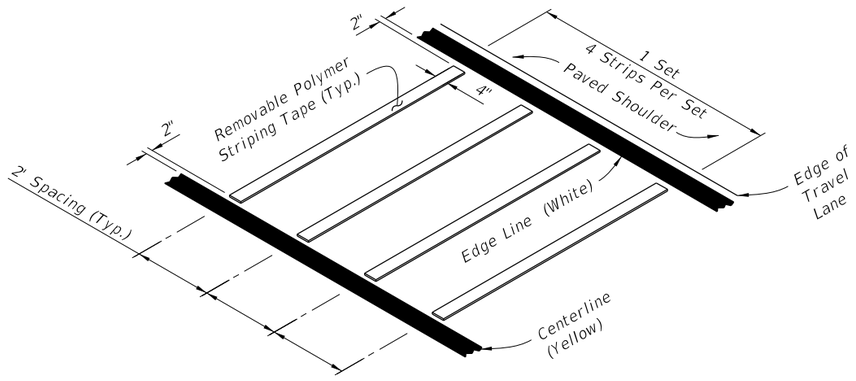
MOVED TO SHEET 1 AND MODIFIED.



* May Be omitted if ROAD WORK AHEAD sign is installed upstream within the project limits.

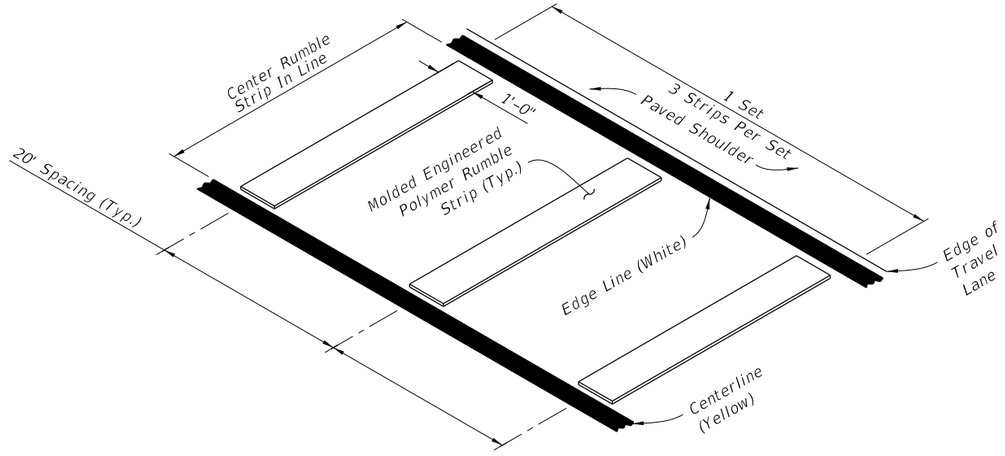
WITH TEMPORARY RAISED RUMBLE STRIPS
(When Required See GENERAL NOTE 2)

MOVED TO INDEX 102-000.



REMOVABLE POLYMER STRIPING TAPE

RUMBLE STRIP SET
OPTION - 1



MOLDED ENGINEERED POLYMER SET

RUMBLE STRIP SET
OPTION - 2

TEMPORARY RAISED RUMBLE STRIPS

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/17			FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	102-603	2 of 3

9/18/2018 10:24:22 AM

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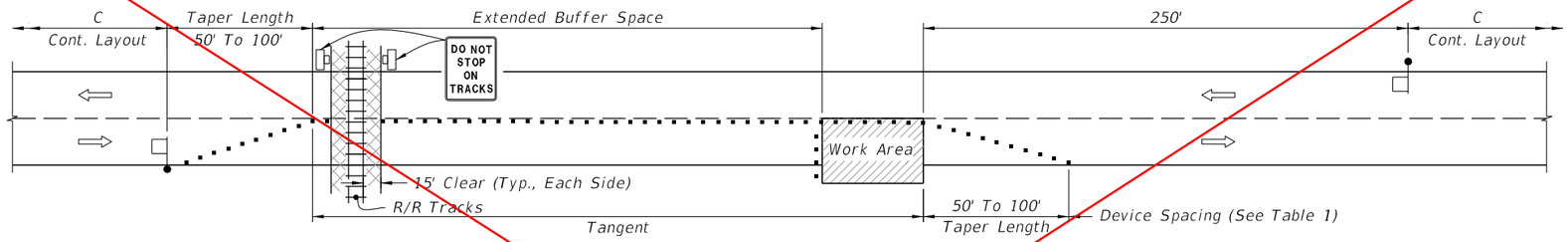
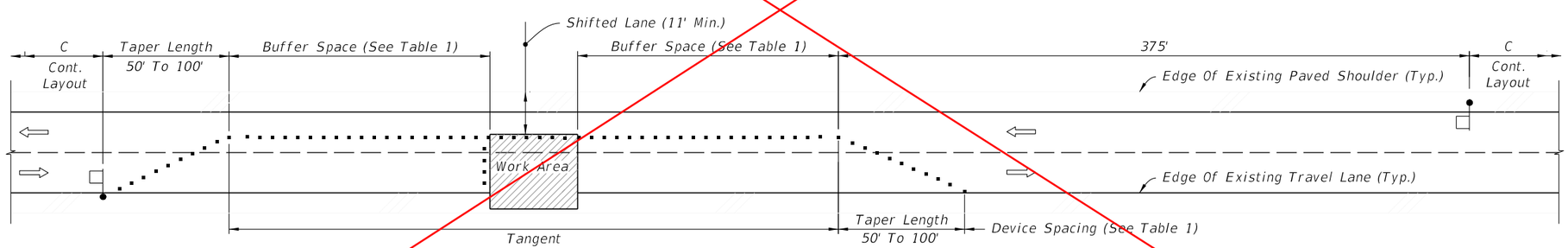


TEMPORARY RAILROAD CROSSING BUFFER SPACE EXTENSION



TEMPORARY LANE SHIFT TO SHOULDER WHEN
WORK AREA ENCROACHES ON THE CENTERLINE

SPECIAL CONDITIONS

Cross Reference:
1. See General Note 1, Sheet 1 for more information.

SPECIAL CONDITIONS

9/18/2018 10:24:22 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	INDEX	SHEET
11/01/17						102-603	3 of 3

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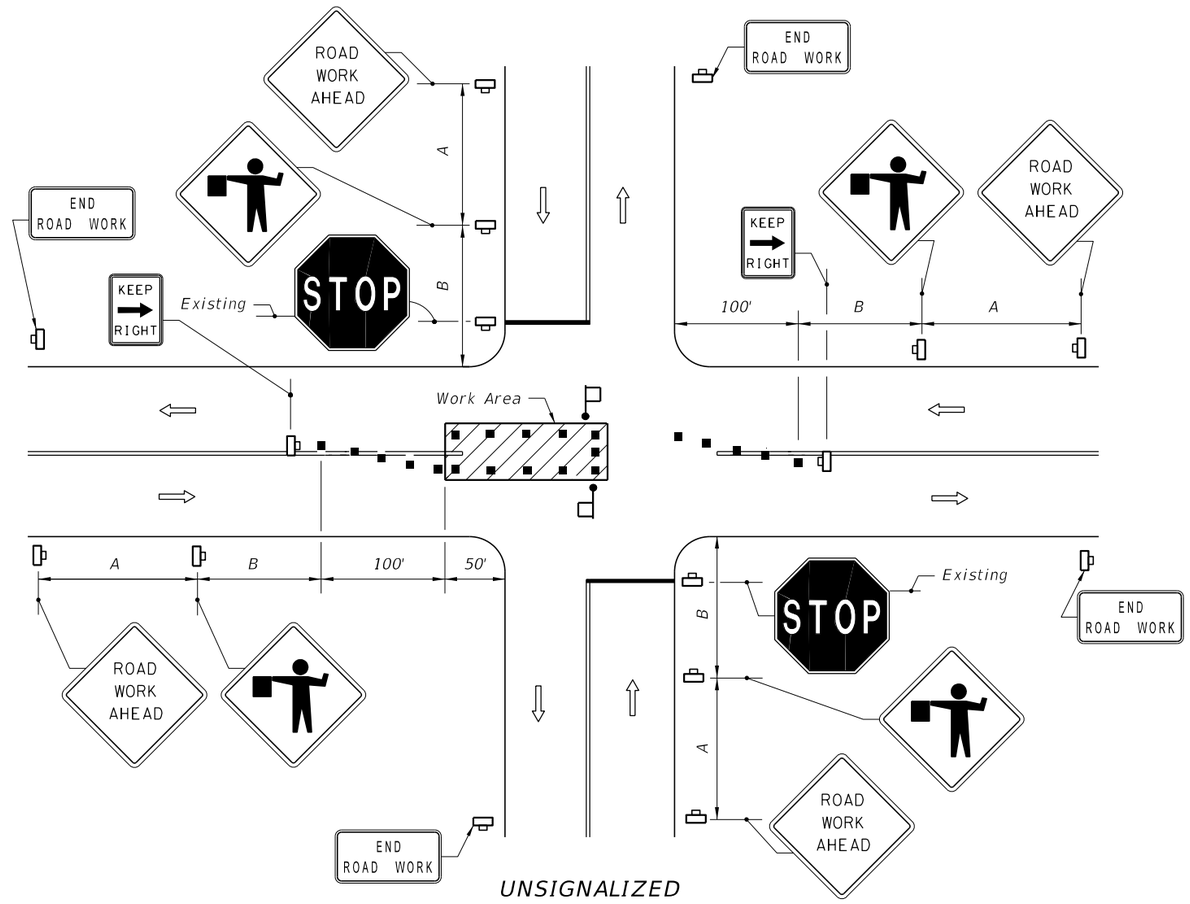
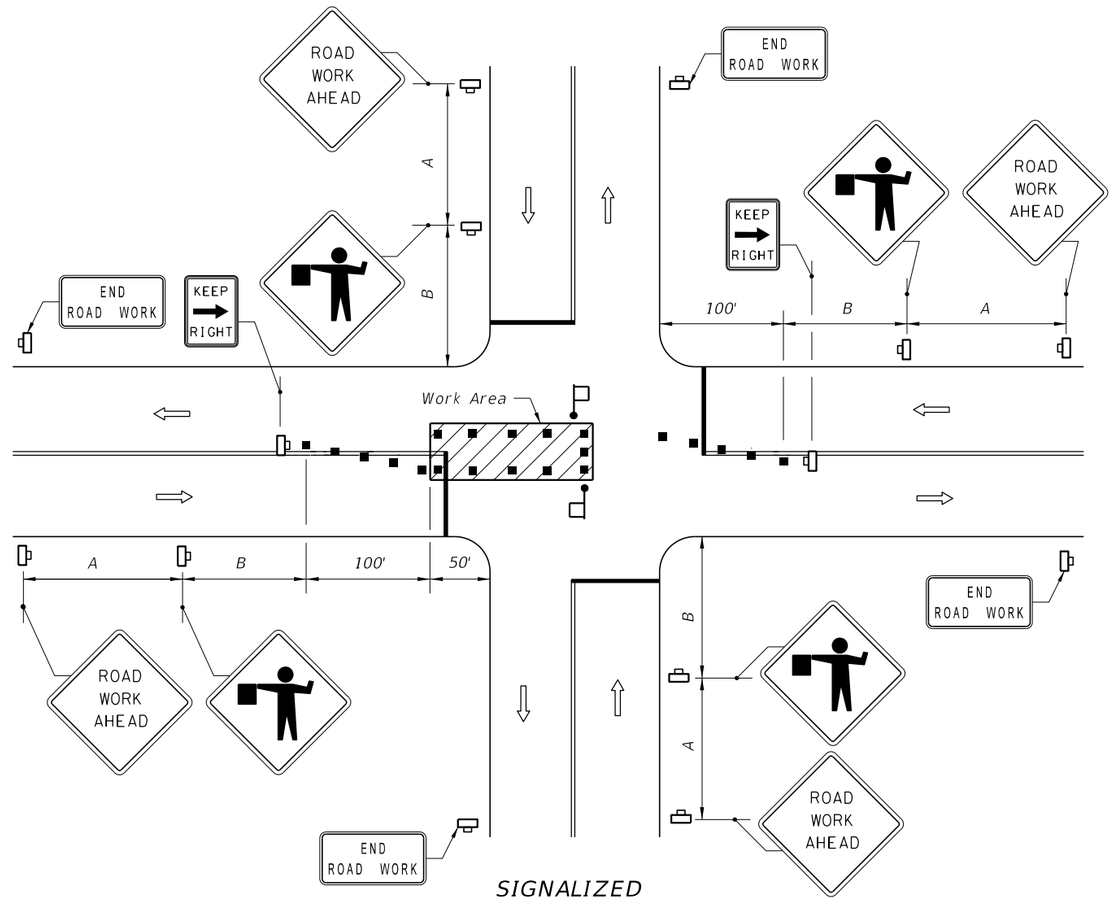


UNSIGNALIZED



SIGNALIZED

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Stop Bar
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. The FLAGGER legend sign may be substituted for the symbol sign.
2. When vehicles in a parking zone block the line of sight to TCZ signs, the signs shall be post mounted and located in accordance with Index 700-101.
3. If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index 102-660.
4. Flaggers shall be located where they can control more than one direction of traffic.

   Flaggers shall be in sight of each other or in direct communication at all times.
5. Maximum spacing between channelizing devices shall be not greater than 20'.
6. Temporary signal phasing modifications are to be approved by the District Traffic Operations Engineer prior to the beginning of work.
7. For general TCZ requirements and additional information, refer to Index 102-600.
8. For unsignalized intersections, use Temporary Raised Rumble Strips in accordance with Index 102-603. Placement of Rumble Strips and additional signs should begin at FLAGGER sign location.

DURATION NOTES

1. ROAD WORK AHEAD AND END ROAD WORK sign may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed is 45 mph or less.
   c. No sight obstructions to vehicles approaching the work area for a distance equal to A plus B.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.

DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.)	
	A	B
40 mph or less	200	200
45 mph	350	350

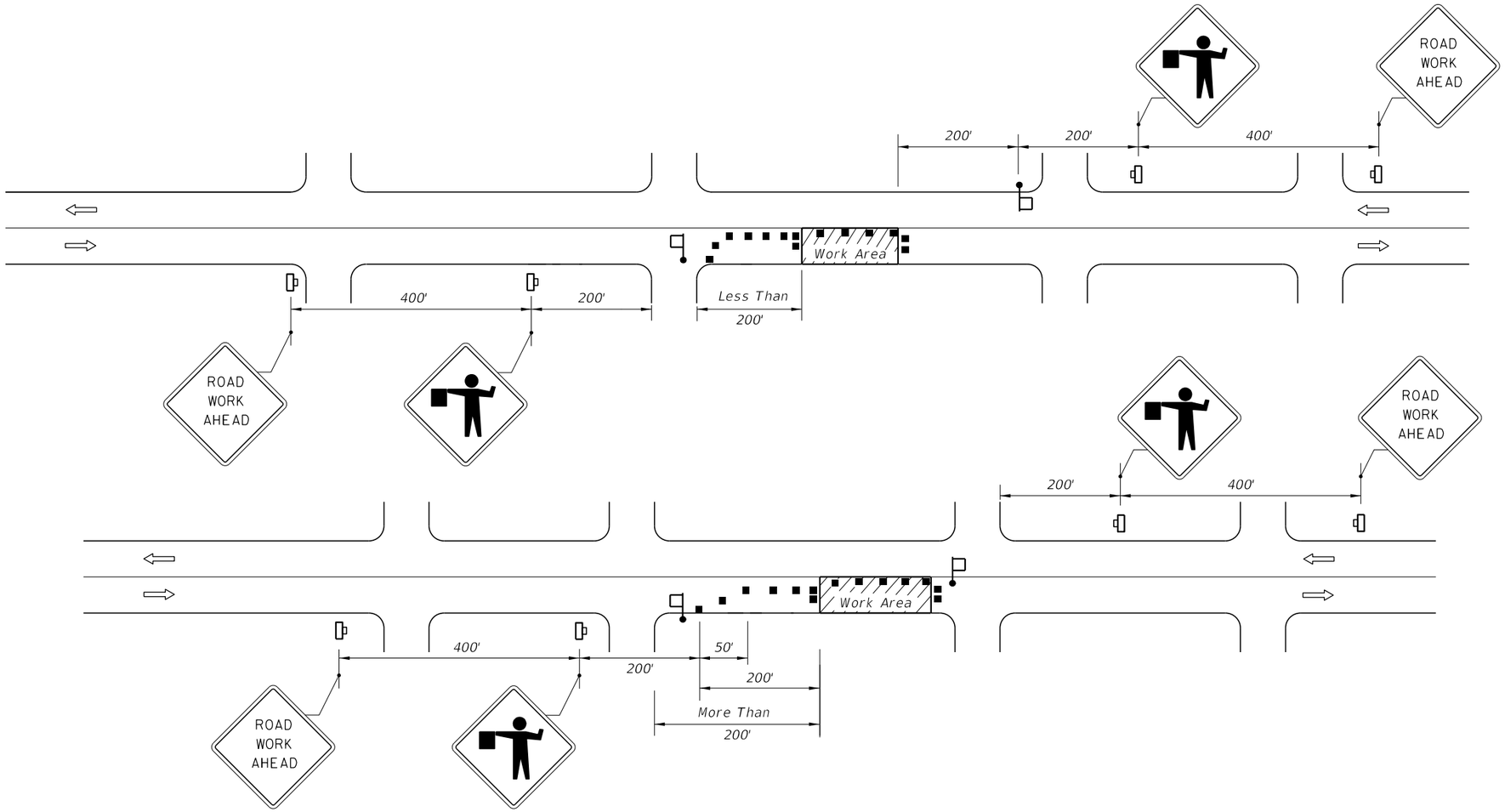
CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF A PORTION OF ONE OR MORE TRAFFIC LANES IN AN INTERSECTION.

9/18/2018 10:25:01 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK IN INTERSECTION	INDEX	SHEET
11/01/17					102-604	1 of 1

DELETED THIS INDEX.



CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF ONE TRAFFIC LANE, FOR WORK AREAS LESS THAN 200' DOWNSTREAM FROM AN INTERSECTION FOR A PERIOD OF MORE THAN 60 MINUTES.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF ONE TRAFFIC LANE, FOR WORK AREAS 200' OR MORE DOWNSTREAM FROM AN INTERSECTION FOR A PERIOD OF MORE THAN 60 MINUTES.

SYMBOLS

- *Work Area*
- *Channelizing Device (See Index 102-600)*
- *Work Zone Sign*
- *Flagger*
- *Lane Identification + Direction of Traffic*

GENERAL NOTES

1. *Work operations shall be confined to one travel lane, leaving the opposing travel lane open to traffic.*
2. *When vehicles in a parking zone block the line of sight to TCZ signs or when TCZ signs encroach on a normal pedestrian walkway, the signs shall be post mounted and located in accordance with Index 700-101.*
3. *If work area is confined to an outside auxiliary lane, the work area shall be barricaded and the FLAGGER signs replaced by ROAD WORK AHEAD signs. Flaggers are not required.*
4. *Flaggers shall be in sight of each other or in direct communication at all times.*
5. *The FLAGGER legend sign may be substituted for the symbol sign.*
6. *The maximum spacing between devices shall be no greater than 25.'*
7. *For general TCZ requirements and additional information, refer to Index 102-600.*
8. *The two channelizing devices directly in front and directly at the end of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.*
9. *Use Temporary Raised Rumble Strips in accordance with Index 102-603. Placement of Rumble Strips and additional signs should begin at FLAGGER sign location.*

DURATION NOTES

1. *ROAD WORK AHEAD sign may be omitted if all of the following conditions are met:*
   - *a. Work operations are 60 minutes or less.*
   - *b. Speed is 45 mph or less.*
   - *c. No sight obstructions to vehicles approaching the work area for a distance of 600 feet.*
   - *d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.*
   - *e. Volume and complexity of the roadway has been considered.*

9/18/2018 10:25:41 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK NEAR INTERSECTION	INDEX	SHEET
11/01/17					102-605	1 of 1

~~GENERAL~~ NOTES

Moved to the Specifications

1. Use either portable signals or span wire signals and include two signal faces for each approach.

2. Obtain approval from the District Traffic Operations Engineer for the installation and timing of the signals prior to the signals being placed in operation. Adjust timing based on changing field conditions as approved by the Worksite Traffic Supervisor. Obtain approval from the District Traffic Operations Engineer for any timing changes that are either reoccurring or last longer than 24 hours.

Note #5 and revised

3. For the maximum distance between portable distance between portable temporary traffic signals do not exceed the distance at which the signals can safely communicate. When the distance between signals is 0.25 miles to 0.50 miles, use a countdown timer on both signals. When the distance between signals is greater than 0.50 miles, use a combination of a pilot vehicle and manually controlled temporary traffic signals.

Note #2 and revised

4. The SIGNAL AHEAD legend sign may be substituted for the symbol sign.

~~5. Use Type III Barricades to block haul road access when the haul road is not in operation and a flagger/signal operator is not on duty, except when the haul road is an existing properly marked road.~~

6. Monitor temporary traffic signals by having one or more workers present during operation. In the event of a temporary traffic signal failure, maintain traffic with flaggers.

~~7. Use Temporary Raised Rumble Strips in accordance with Index 102-603.~~

Added notes 1, 3, & 4.

SYMBOLS

- Work Area
- Work Zone Sign
- Temporary Traffic Signal
- Channelizing Device (See Index 102-600)
- Type III Barricade
- Stop Bar
- Flagger
- Lane Identification + Direction of Traffic

Revised

~~CONDITIONS~~

~~WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES WILL ENCROACH ON ONE LANE OR MOMENTARILY ENCROACH ON BOTH LANES OF A TWO-LANE TWO-WAY ROADWAY AND TRAFFIC SIGNALS ARE NEEDED.~~

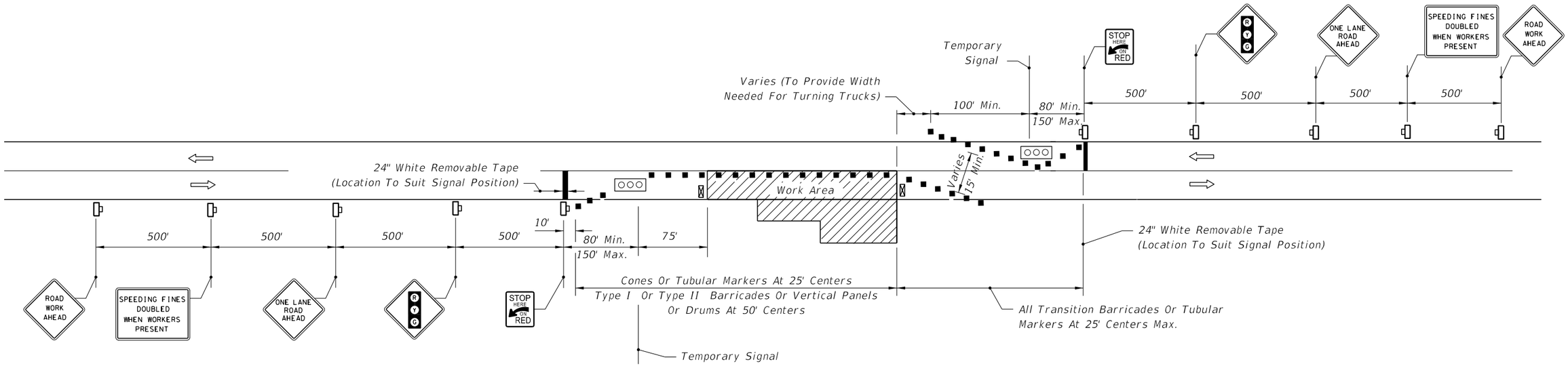
TWO-LANE ROADWAY, LANE CLOSURE USING TEMPORARY TRAFFIC SIGNALS

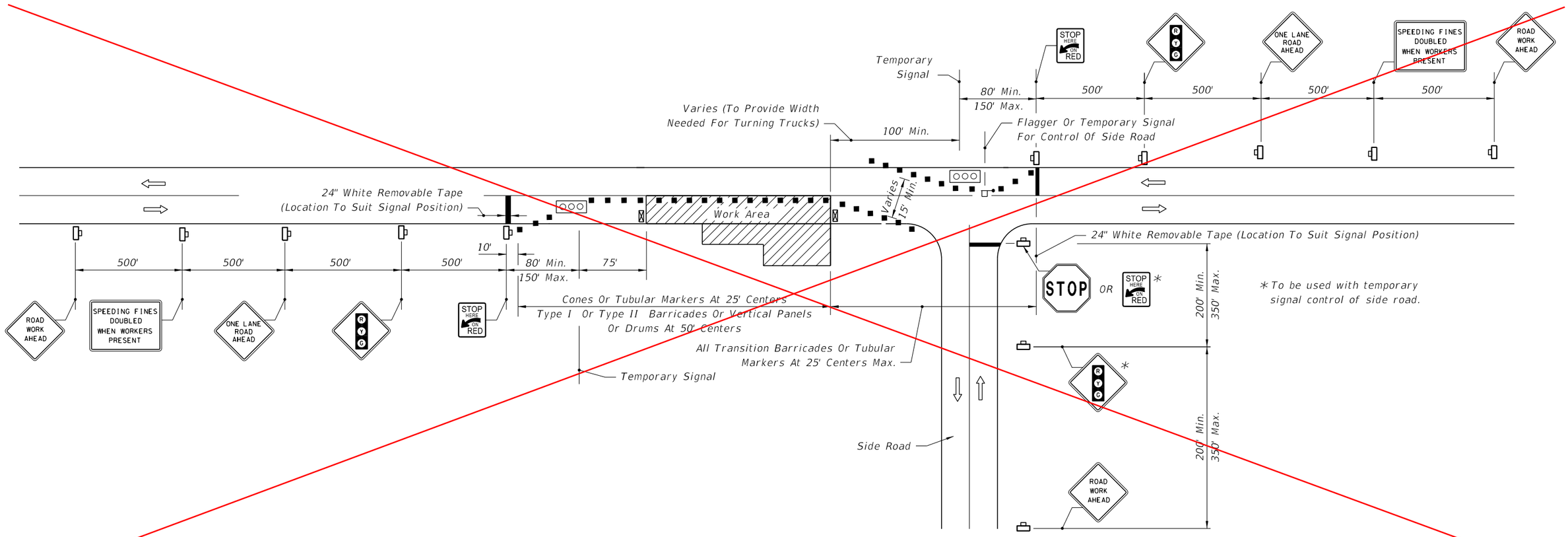
102-030

9/18/2018 10:26:26 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY - SIGNAL CONTROL	INDEX	SHEET
11/01/17						102-606	1 of ~~4~~ 1

Revised and moved to Sheet 1

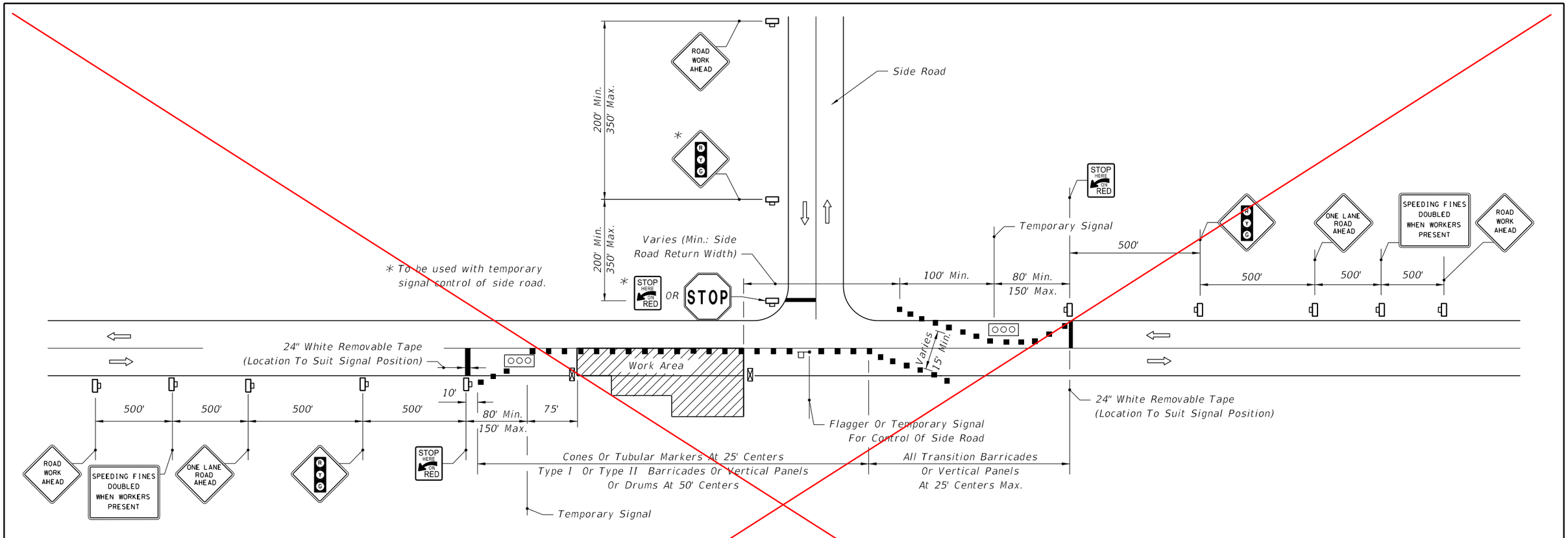




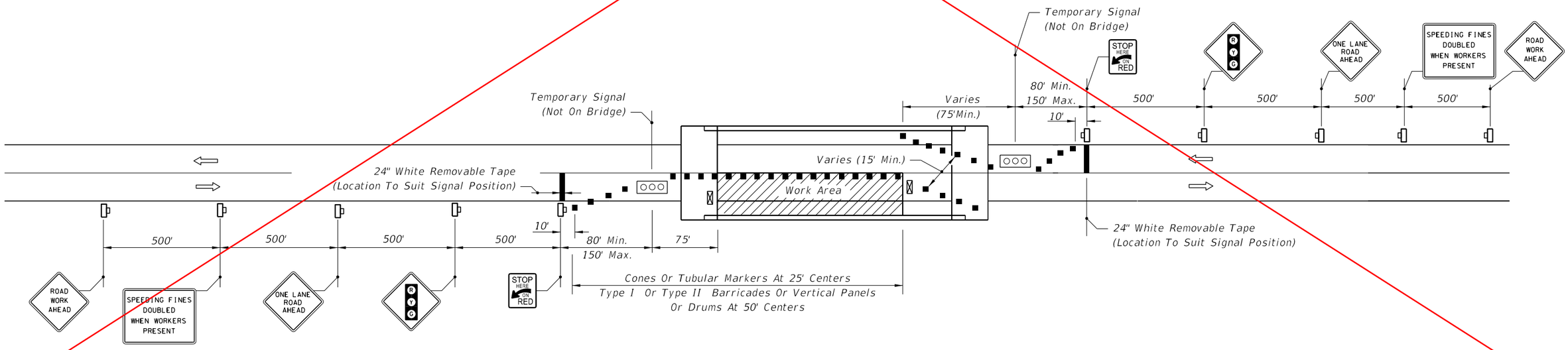
SINGLE LANE CLOSURE • ROADWAY AND BRIDGES ALL LENGTHS

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY - SIGNAL CONTROL	INDEX 102-606	SHEET 2 of 4

9/18/2018 10:26:29 AM



SINGLE LANE CLOSURE • ROADWAY AND BRIDGES ALL LENGTHS



SINGLE LANE CLOSURE • SHORT BRIDGES

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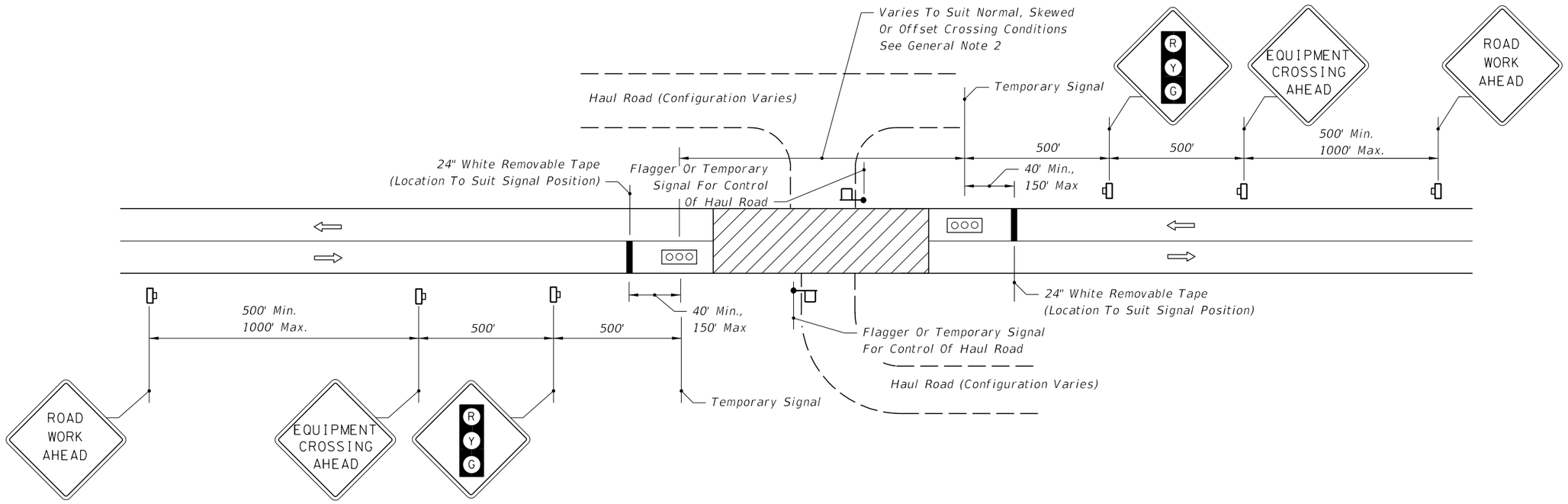
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY - SIGNAL CONTROL	INDEX	SHEET
11/01/17						102-606	3 of 4



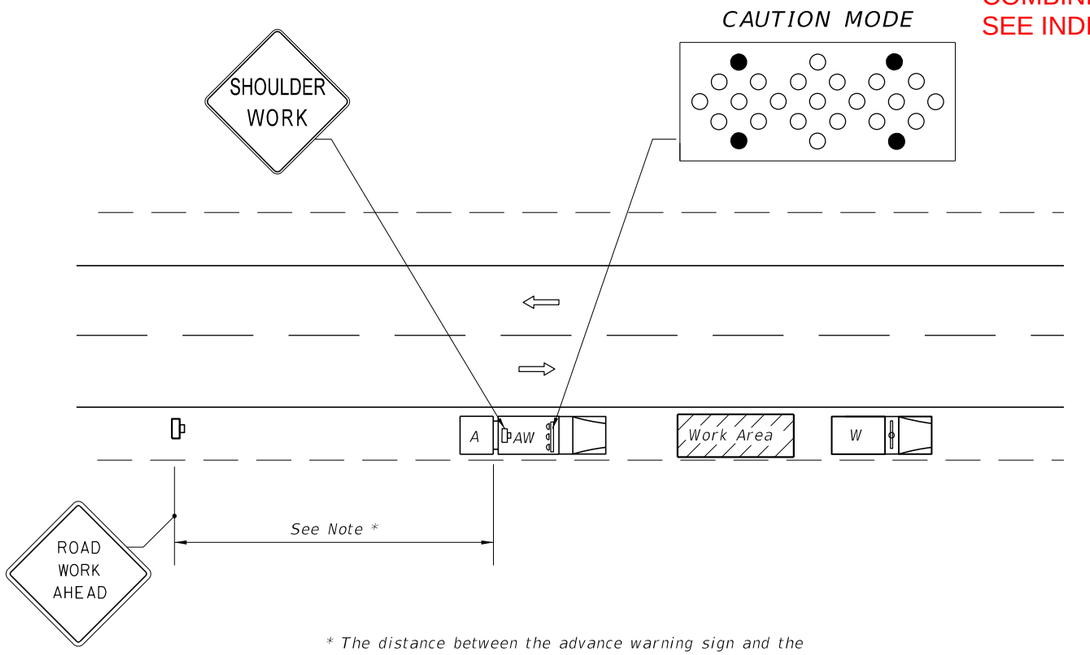
MOMENTARY ROADWAY CLOSURE • HAUL ROUTE CROSSING

Created new Index 102-035 "Haul Road Crossing" and deleted sheet from this Index.

9/18/2018 10:26:31 AM

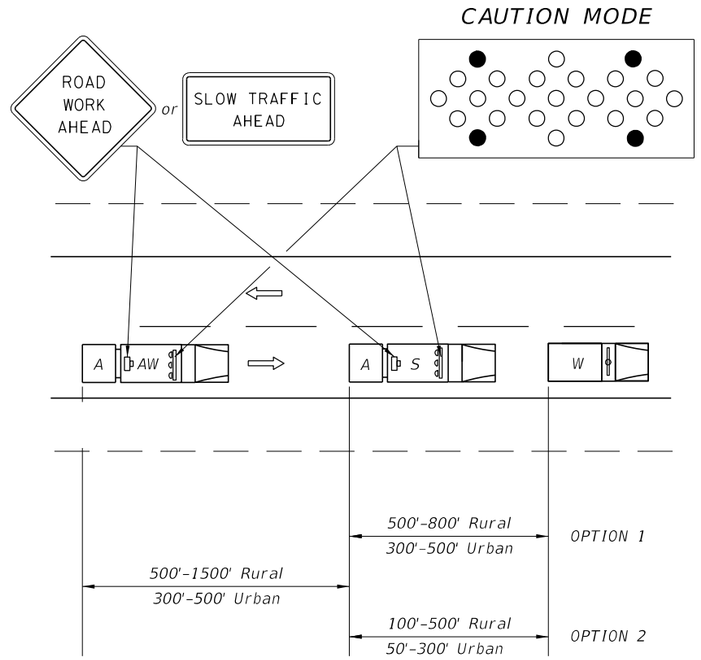
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY - SIGNAL CONTROL	INDEX	SHEET
11/01/17						102-606	4 of 4

COMBINED WITH INDEX 102-619.
SEE INDEX 102-015.



* The distance between the advance warning sign and the work location should not exceed 5 miles.

WORK ON SHOULDER



OPTION 1: Advanced Warning Vehicle is optional and to be operated on the shoulder when feasible. If an Advance Warning Vehicle is operated in the shoulder, an approved Truck Mounted Attenuator is required on both the Advance Warning and Shadow Vehicles. If an Advance Warning Vehicle is operated in the lane behind the Shadow Vehicle, an approved Truck Mounted Attenuator will be required on the Advance Warning Vehicle, but not required on the Shadow Vehicle. The Advance Waning Arrow Board and Warning Sign is required on both the Advance warning and Shadow Vehicles.

OPTION 2: Advanced Warning Vehicle is required and must be operated in the lane behind the shadow vehicle. An approved Truck Mounted Attenuator will be required on the Advanced Warning Vehicle but not required on the Shadow Vehicle. The Advance Warning Arrow Board and Warning Sign is required on both the Advance Warning and Shadow Vehicles.

WORK IN TRAVEL WAY
(Option 2 Shown, Option 1 Similar)

SYMBOLS

- Work Area
- Work Zone Sign
- Lane Identification + Direction of Traffic
- W — Work Vehicle With Rotating/Strobe Lights
- X — Shadow (S) Or Advance Warning (AW) Vehicle with Advance Warning Arrow Board and Sign Message
- A — Truck/Trailer Mounted Attenuator (TMA)
- Advanced Warning Arrow Board

GENERAL NOTES

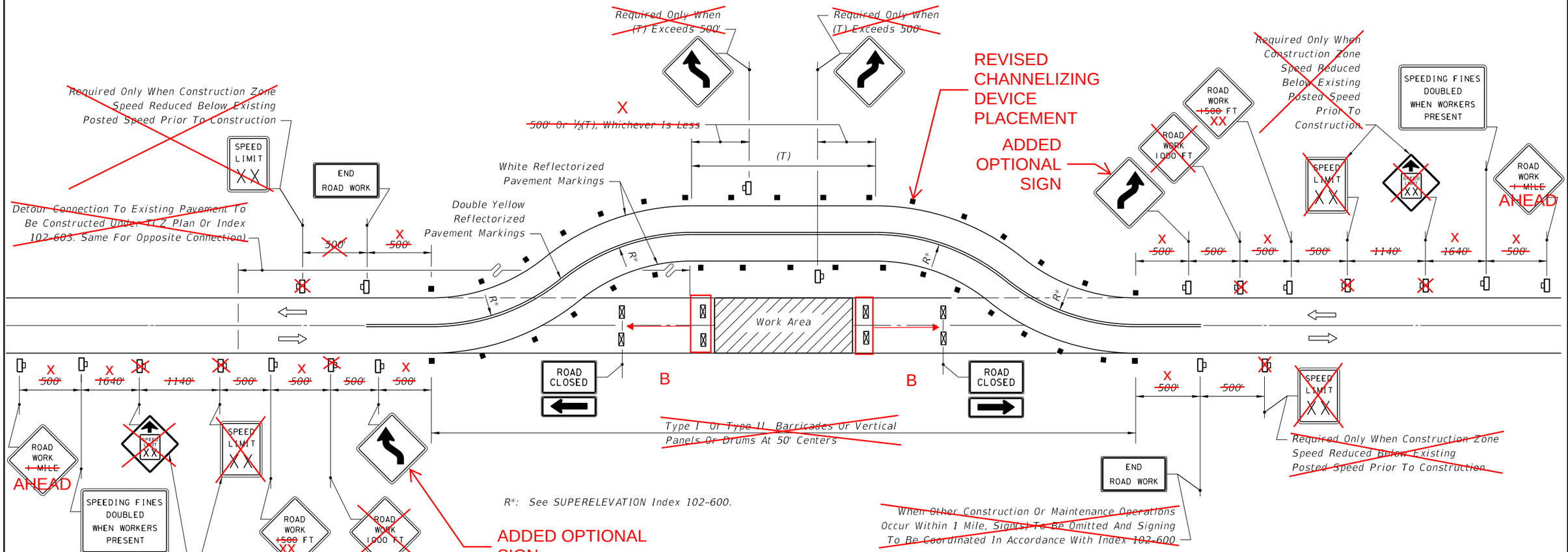
1. Where work activities within 2' of the edge of travel way are incidental (i.e., Mowing, Litter Removal), the Engineer may delete requirements for signs and the advance warning vehicle provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
2. If an arrow board is used, the caution mode shall be used.
3. Shadow and Advance Warning Vehicle shall display rotating/strobe lights.
4. For general TCZ requirements and additional information, refer to Index 102-600.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES REQUIRE AN INTERMITTENT OR CONTINUOUS MOVING OPERATION.

9/18/2018 10:27:11 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT	FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY MOBILE OPERATION, WORK ON SHOULDER AND WORK WITHIN THE TRAVEL WAY	INDEX 102-607 / SHEET 1 of 1



SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. For speed sign applications, see Index 102-600.
2. Where the tangent distance (T) exceeds 600', spacing between cones or tubular markers may be increased to 50' or spacing between Type I or Type II barricades, vertical panels or drums may be increased to 100' within limits of the tangent, or post mounted delineators at 50' centers may be substituted for the barricades, vertical panels or drums.
3. On the existing pavement, all existing markings within the realignment which conflict with the revised traffic pattern are to be removed and removable pavement markings used for marking a new centerline and edge lines.
4. Where the tangent distance (T) exceeds 600' and no passing or stopping sight distance restrictions exist, the yellow reflectorized markings used to indicate the centerline of the traveled way may be replaced with yellow reflectorized markings in a broken pattern. For raised pavement marker application see Index 102-600 and Index 706-001.

REVISED

5. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
6. If temporary structures are required on the diversion, traffic control will be in conformance with Index 105-650.
7. For general TCZ requirements and additional information, refer to Indexes 102-600 and 706-001.
8. If posted speed for Work Zone is 45 mph or less, use "ROAD WORK ½ MILE" and space accordingly.

ADDED NOTES 1 & 3.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES REQUIRE THE CLOSURE OF BOTH LANES AND A TEMPORARY DIVERSION IS CONSTRUCTED.

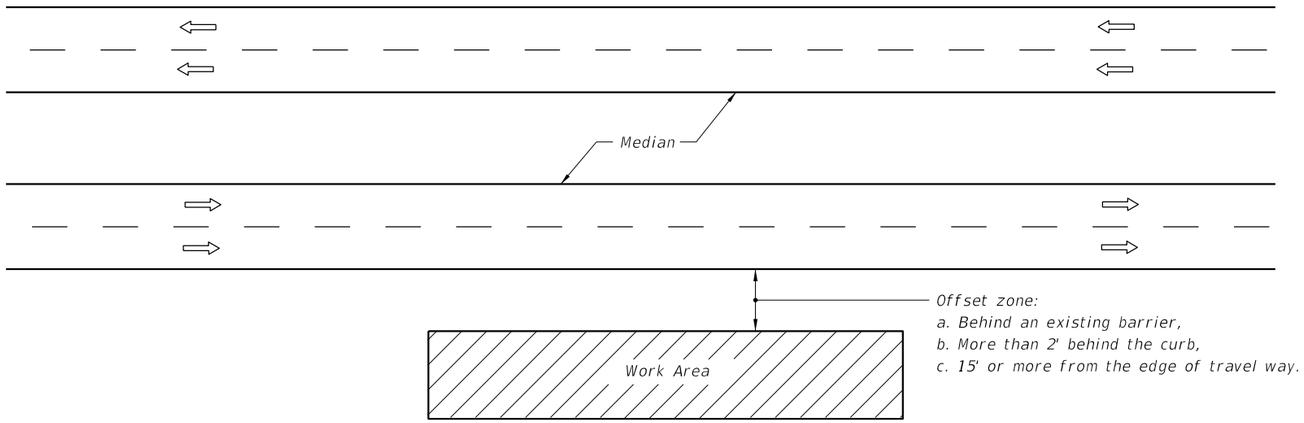
9/18/2018 10:27:53 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY TEMPORARY DIVERSION CONNECTION	INDEX 102-608	SHEET 1 of 1

TWO-LANE ROADWAY, TEMPORARY DIVERSION

102-040

COMBINED WITH INDEX 102-601. SEE REDLINES FOR INDEX 102-601.



GENERAL NOTES

1. If the work operation (excluding establishing and terminating the work area), requires that two or more work vehicles cross the offset zone in any one hour, traffic control will be in accordance with Index 102-612.
2. No special signing is required.
3. This index also applies when work is being performed on a multilane undivided highway.
4. This index also applies to work performed in the median behind an existing barrier or more than 15' from the edge of travel way, both roadways. Work performed in the median behind curb and gutter shall be in accordance with Index 102-612.
5. When a side road intersects the highway within the work area, additional traffic control devices shall be placed in accordance with other applicable TCZ Indexes.
6. When construction activities encroach on a sidewalk, refer to Index 102-660.
7. For general TCZ requirements and additional information, refer to Index 102-600.

SYMBOLS

Work Area

Lane Identification + Direction of Traffic

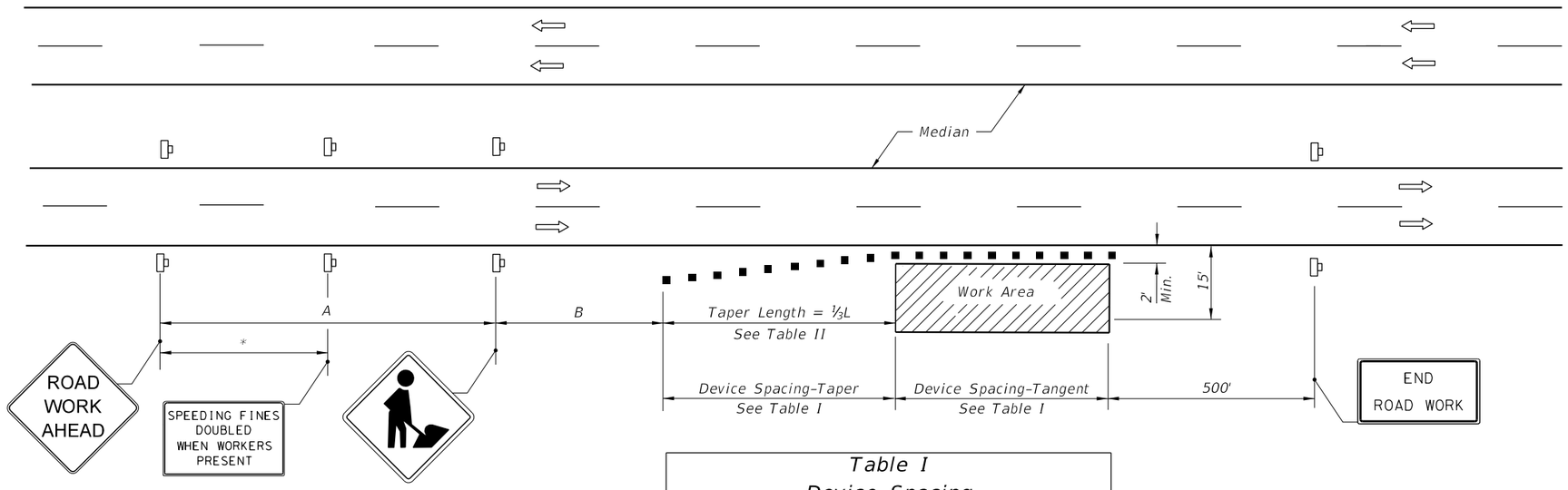
CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE BEHIND AN EXISTING BARRIER, MORE THAN 2' BEHIND THE CURB, OR 15' OR MORE FROM THE EDGE OF TRAVEL WAY.

9/18/2018 10:28:31 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	MULTILANE, WORK OUTSIDE SHOULDER	INDEX	SHEET
11/01/17						102-611	1 of 1

COMBINED WITH INDEX 102-602. SEE 102-602 REDLINES.



DISTANCE BETWEEN SIGNS		
Speed	Spacing (ft.)	
	A	B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

* 250' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades 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

Table II
Taper Length - Shoulder

Speed (mph)	⅓L (ft.)			Notes
	8' Shldr.	10' Shldr.	12' Shldr.	
25	28	35	42	$L=\frac{WS^2}{60}$
30	40	50	60	
35	55	68	82	
40	72	90	107	
45	120	150	180	L=WS
50	133	167	200	
55	147	183	220	
60	160	200	240	
65	173	217	260	
70	187	233	280	

8' minimum shoulder width.

⅓L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

SYMBOLS

Work Area

Channelizing Device (See Index 102-600)

Work Zone Sign

Lane Identification + Direction of Traffic

GENERAL NOTES

1. When a high volume of work vehicles are entering and leaving the Work Area at speeds slower than 10 MPH below the posted speed, place an MOT-5-06 sign in the ROAD WORK AHEAD sign location and shift the ROAD WORK AHEAD sign upstream 500 ft.
2. This TCZ plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
3. When work is being performed on a multilane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
4. WORKERS signs to be removed or fully covered when no work is being performed.
5. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign.
6. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
7. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES

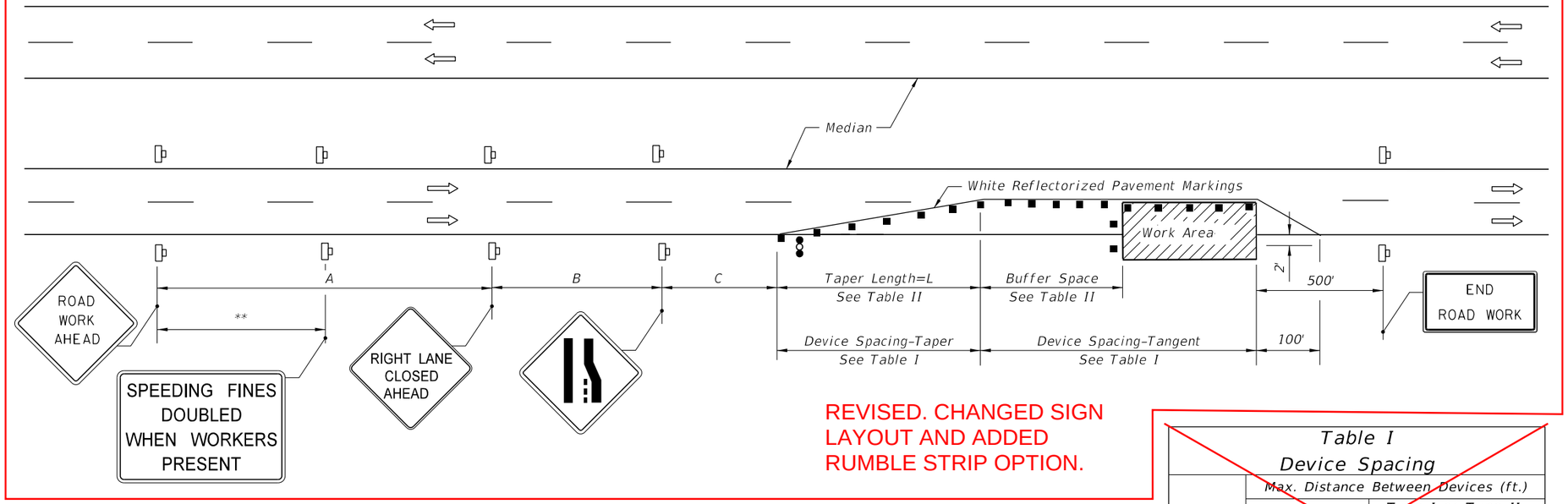
1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

9/18/2018 10:32:16 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	MULTILANE, WORK ON SHOULDER	INDEX	SHEET
11/01/17					102-612	1 of 1



REVISED. CHANGED SIGN LAYOUT AND ADDED RUMBLE STRIP OPTION.

DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.)		
	A	B	C
40 mph or less	200	200	200
45 mph	350	350	350
50 mph	500	500	500
*55 mph or greater	2640	1640	1000

* The ROAD WORK 1 MILE sign may be used as an alternate to the ROAD WORK AHEAD sign and the RIGHT LANE CLOSED ½ MILE sign may be used as an alternate to the RIGHT LANE CLOSED AHEAD sign.

** 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board

GENERAL NOTES

1. Work operations shall be confined to one traffic lane, leaving the adjacent lane open to traffic.
2. On undivided highways the median signs as shown are to be omitted.
3. When work is performed in the median lane on divided highways, the channelizing device plan is inverted and left lane closed and lane ends signs substituted for the right lane closed and lane end signs.

   The same applies to undivided highways with the following exceptions:
   a. Work shall be confined within one median lane.
   b. Additional barricades, cones, or drums shall be placed along the centerline abutting the work area and across the trailing end of the work area.

   When work on undivided highways occurs across the centerline so as to encroach on both median lanes, the inverted plan is applied to the approach of both roadways.
4. Signs and traffic control devices are to be modified in accordance with INTERMITTENT WORK STOPPAGE details (sheet 2 of 2) when no work is being performed and the highway is open to traffic.
5. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
6. When paved shoulders having a width of 8 ft. or more are closed, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the travel way. See Index 102-612 for shoulder taper formulas.

3.

7. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
8. This TCZ plan does not apply when work is being performed in the middle lane(s) of a six or more lane highway. See Index 102-614.
9. For general TCZ requirements and additional information, refer to Index 102-600.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades 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

Table II
Buffer Space and Taper Length

Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)	
	Dist. (ft.)	L (ft.)	Notes (Merge)
25	155	125	$L = \frac{WS^2}{60}$
30	200	180	
35	250	245	
40	305	320	
45	360	540	$L = WS$
50	425	600	
55	495	660	
60	570	720	
65	645	780	
70	730	840	

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in notes column. Where:

L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

DURATION NOTES

1. Temporary white edgeline may be omitted for work operations less than 3 consecutive calendar days.
2. For work operations up to approximately 15 minutes, signs, channelizing devices, arrow board, and buffer space may be omitted if all of the following conditions are met:
   a. Speed limit is 45 mph or less.
   b. No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space and the taper length combined.
   c. Volume and complexity of the roadway has been considered.
   d. The closed lane is occupied by a class 5 or larger, medium duty truck(s) with a minimum gross weight vehicle rating (GWVR) of 16,001 lb with high-intensity, rotating, flashing, oscillating, or strobe lights mounted above the cab height and operating.
3. For work operations up to 60 minutes, arrow board and buffer space may be omitted if conditions a, b, and c in DURATION NOTE 2 are met, and vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

ADDED NEW NOTES 1, 2 & 4. CHANGED NEW NOTE 3.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE LANE ADJACENT TO EITHER SHOULDER AND THE AREA 2' OUTSIDE THE EDGE OF TRAVEL WAY.

MULTILANE ROAD, SINGLE LANE CLOSURE

102-045

LAST REVISION	REVISION	DESCRIPTION:	FY 2019-20 STANDARD PLANS	MULTILANE, WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE	INDEX	SHEET
11/01/17			FDOT		102-613	1 of ~~2~~ 1

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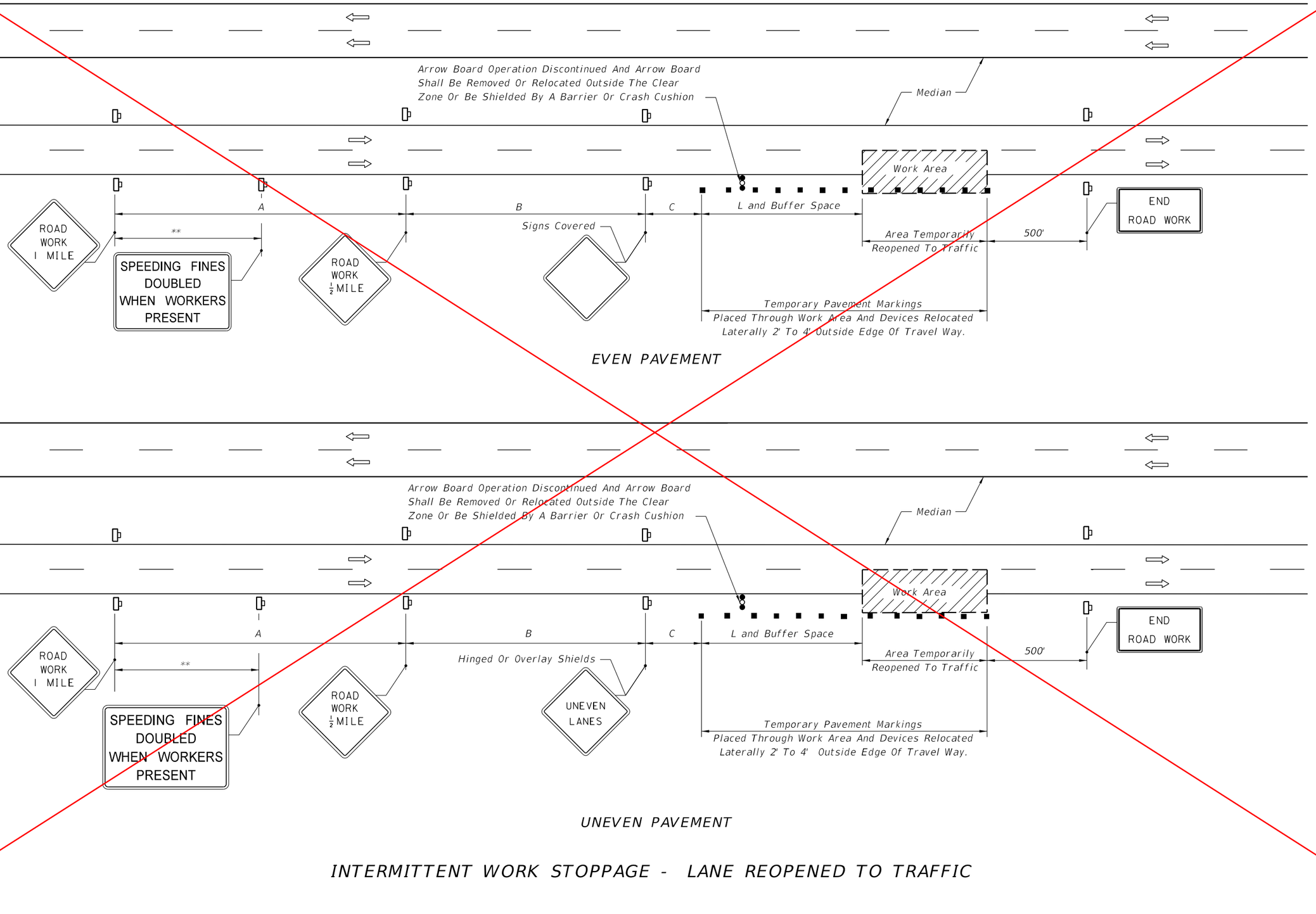


INTERMITTENT WORK STOPPAGE - LANE REOPENED TO TRAFFIC

9/18/2018 10:33:03 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	MULTILANE, WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE	INDEX 102-613	SHEET 2 of 2

DELETED THIS INDEX.

EXISTING POSTED SPEED	PROPOSED WORK ZONE SPEED	REMARKS
MPH	MPH	The 'Proposed Work Zone Speeds' are recommended speeds for the traffic control plan detailed below; however, where the Engineer deems other speeds are appropriate, the applicable speeds are to be shown on the plans.
65	55	
55	45	
45	35	

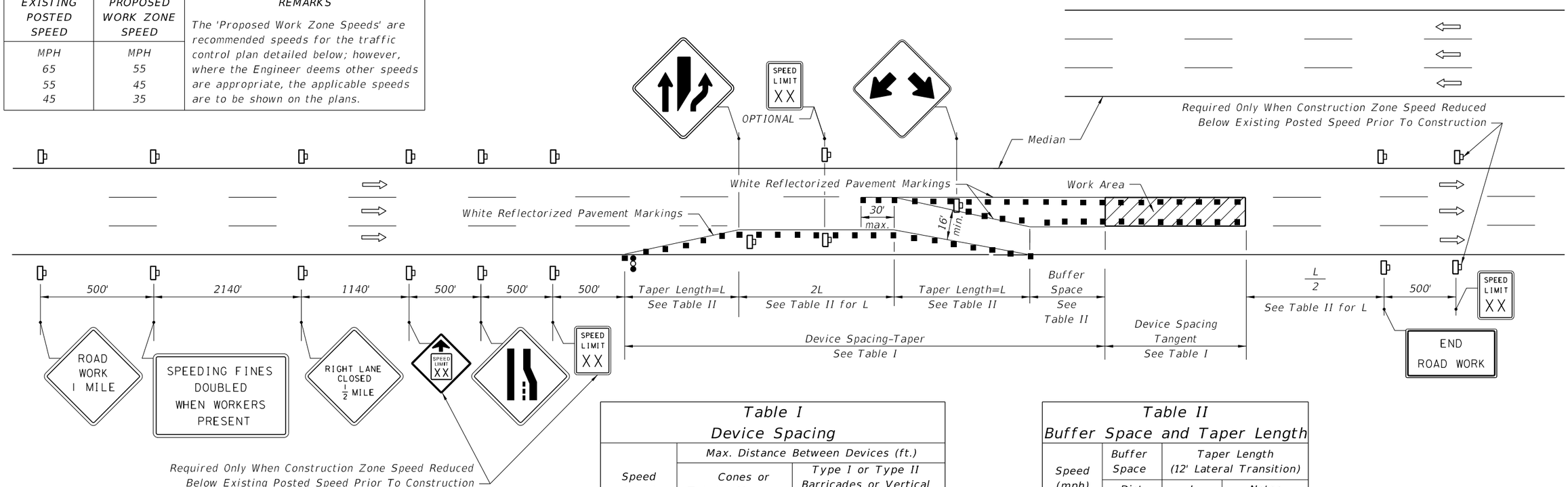


Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades 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

Table II
Buffer Space and Taper Length

Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)	
	Dist. (ft.)	L (ft.)	Notes (Merge)
25	155	125	$L = \frac{WS^2}{60}$
30	200	180	
35	250	245	
40	305	320	
45	360	540	L = WS
50	425	600	
55	495	660	
60	570	720	
65	645	780	
70	730	840	

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in the notes column.
Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic

CONDITION NOTES

1. The RIGHT LANE CLOSED and lane reduction signs are to be removed or fully covered when no work is being performed and the center lane is opened to traffic.
2. For work performed in the median or outside lane, refer to Index 102-613.
3. When the lane closure exceeds a continuous 24 hour period, all existing pavement markings within the realignment which conflict with the revised traffic pattern are to be removed and removable pavement marking used for marking new edge lines and centerline.

GENERAL NOTES

1. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
2. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES

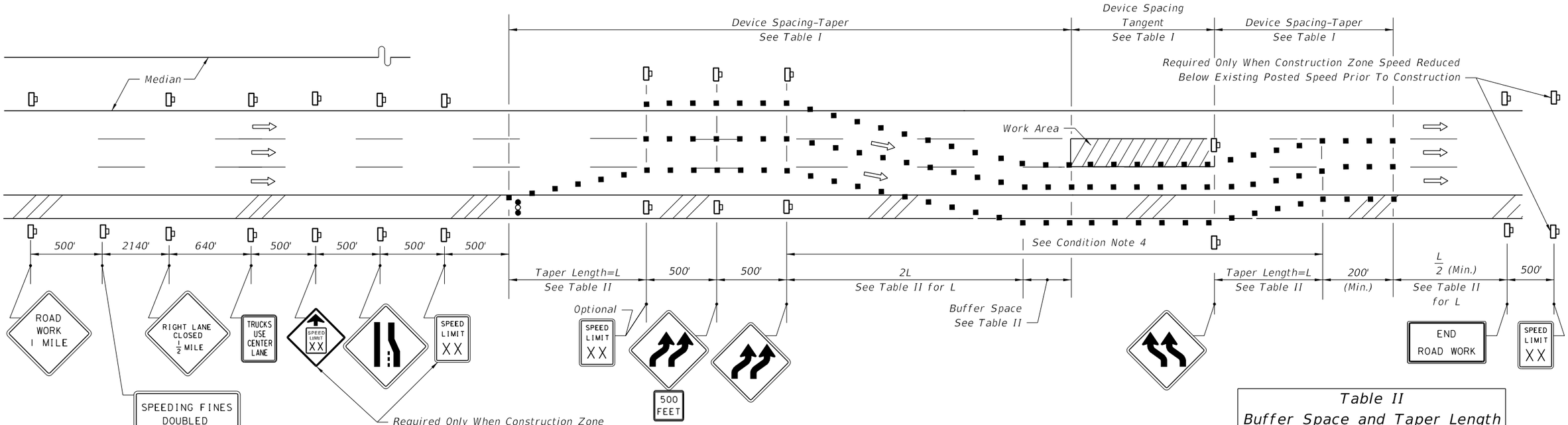
1. Temporary pavement markings may be omitted for work operations less than 3 days.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON ANY PORTION OF A CENTER LANE OF A MULTILANE HIGHWAY, AND TWO DRIVING LANES ARE MAINTAINED ON THE TRAVEL WAY.

9/18/2018 10:35:09 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	MULTILANE, WORK WITHIN TRAVEL WAY, CENTER LANE	INDEX 102-614	SHEET 1 of 2



EXISTING POSTED SPEED	PROPOSED WORK ZONE SPEED	REMARKS
MPH	MPH	The 'Proposed Work Zone Speeds' are recommended speeds for the traffic control plan detailed below; however, where the Engineer deems other speeds are appropriate, the applicable speeds.
65	55	
55	45	
45	35	

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades 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

Table II
Buffer Space and Taper Length

Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)		
	Dist. (ft)	L (ft)	Notes (Merge)	
25	155	125	$L = \frac{WS^2}{60}$	
30	200	180		
35	250	245		
40	305	320		
45	360	540	$L = WS$	
50	425	600		
55	495	660		
60	570	720		
65	645	780		
70	730	840		

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in the notes column.
Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board

CONDITION NOTES

1. See General Notes, Sheet 1.
2. Length of time that traffic is using shoulder should be minimized. For example, remove lane closure and lane shift at night (unless performing night work) if practical.
3. The RIGHT LANE CLOSED, lane reduction and reverse curve signs are to be removed or fully covered when no work is being performed and the travel way is open to traffic.
4. When the lane closure exceeds a continuous 24 hour period, all existing pavement markings within the realignment which conflict with the revised traffic pattern are to be removed and removable pavement markings used for marking new edge lines and centerlines.
5. For general TCZ requirements and additional information, refer to Index 102-600.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON ANY PORTION OF A CENTER LANE OF A MULTILANE HIGHWAY, AND TWO DRIVING LANES ARE MAINTAINED, AND, THE OUTSIDE SHOULDER PAVEMENT IS TEMPORARILY USED AS A TRAVEL LANE.

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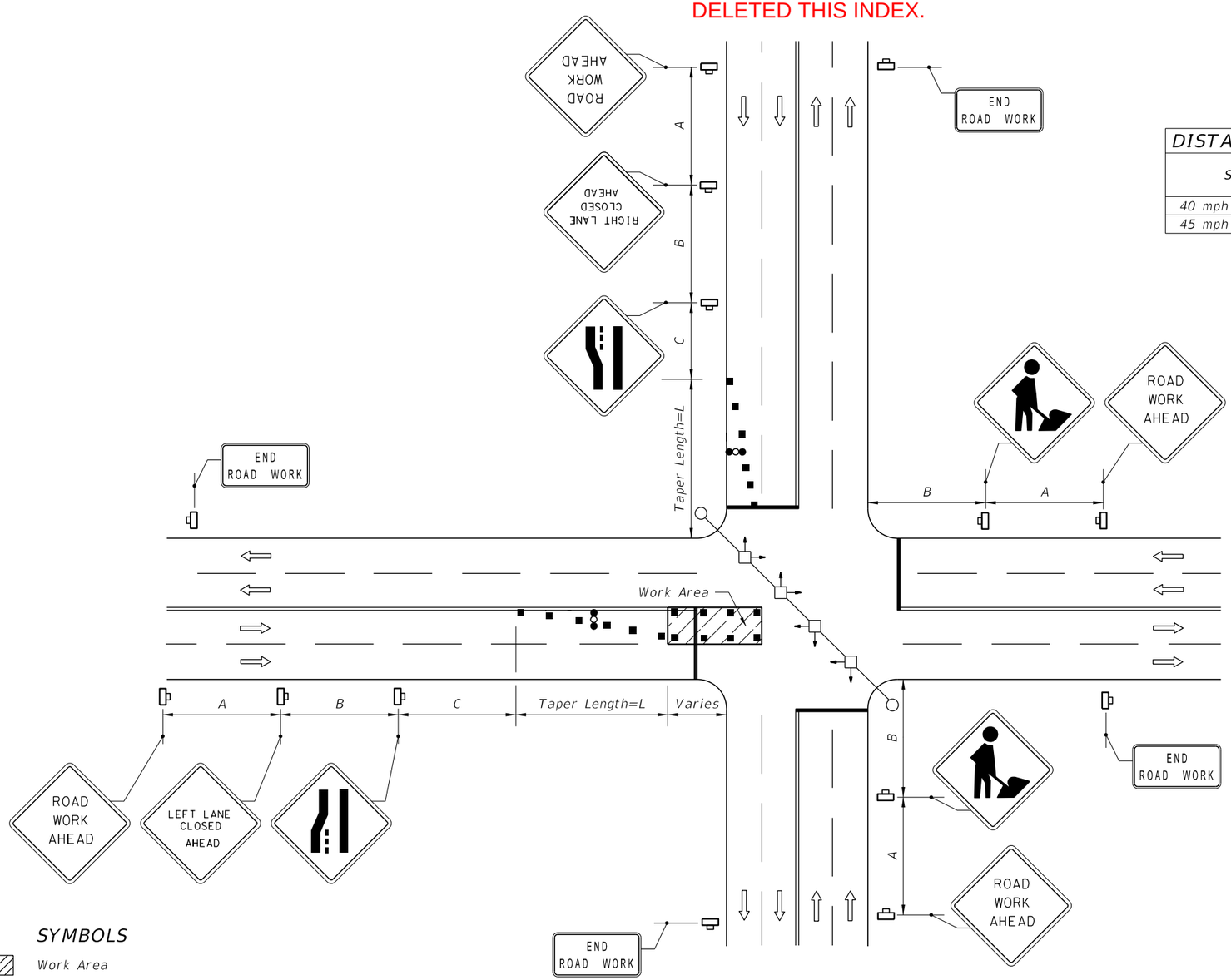
DELETED THIS INDEX.



SIGNALIZED

DISTANCE BETWEEN SIGNS			
Speed	Spacing (ft.)		
	A	B	C
40 mph or less	200	200	200
45 mph	350	350	350

Table II Taper Length - Merge (12' Lateral Transition)		
Speed (mph)	L (ft.)	Notes (Merge)
25	125	$L = \frac{WS^2}{60}$
30	180	
35	245	
40	320	
45	540	L=WS

For lateral transitions other than 12', use formula for L shown in the notes column. Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Stop Bar
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF AT LEAST ONE MEDIAN TRAFFIC LANE.

GENERAL NOTES

1. *The WORKERS legend sign may be substituted for the symbol sign.*
2. *When vehicles in a parking zone block the line of sight to TCZ signs, the signs shall be post mounted and located in accordance with Index 700-101.*
3. *If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index 102-660.*
4. *Dual signs are required for divided roadways.*
5. *Maximum spacing between barricades, vertical panels, cones, tubular markers and drums shall not be greater than 25'.*
6. *Temporary signal phasing modifications are to be approved by the District Traffic Operations Engineer prior to the beginning of work.*
7. *For general TCZ requirements and additional information, refer to Index 102-600.*

DURATION NOTES

1. *Signs and arrow board may be omitted if all of the following conditions are met:*
   a. *Work operations are 60 minutes or less.*
   b. *Speed is 45 mph or less.*
   c. *No sight obstructions to vehicles approaching the work area for a distance equal to twice the taper length.*
   d. *Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.*
   e. *Volume and complexity of the roadway has been considered.*

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LAST REVISION 11/01/17	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	MULTILANE, WORK IN INTERSECTION	INDEX 102-615	SHEET 1 of 1

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GENERAL NOTES

1. Work operations shall be confined to either one lane, or lane combinations as follows:

   a. Outside travel lane;
   b. Outside auxiliary lane;
   c. Outside travel lane and adjoining auxiliary lane;
   d. Inside travel lane △;
   e. Inside auxiliary lane △;
   f. Inside travel lane and adjoining auxiliary lane △
   △ See Sheet 3

   If the work area is confined to an auxiliary lane the work area shall be barricaded and the RIGHT (LEFT) LANE CLOSED AHEAD signs replaced by ROAD WORK AHEAD signs, and the merge symbol signs eliminated.

2. When vehicles in a parking zone block the line of sight to TCZ signs, the signs shall be post mounted and located in accordance with Index 700-101

3. If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index 102-660.

4. Signs are required on the median side for divided highways.

5. The two channelizing devices directly in front and directly at the end of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.

6. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES

1. For work operations up to approximately 15 minutes, signs, channelizing devices, and arrow board may be omitted if all of the following conditions are met:

   a. Speed limit is 45 mph or less.
   b. No sight obstructions to vehicles approaching the work area for a distance equal to twice the taper length.
   c. Volume and complexity of the roadway has been considered.
   d. The closed lane is occupied by a class 5 or larger, medium duty truck(s) with a minimum gross weight vehicle rating (GWVR) of 16,001 lb with high-intensity, rotating, flashing, oscillating, or strobe lights mounted above the cab height and operating.

2. For work operations up to 60 minutes, the arrow board may be omitted if conditions a, b, and c in DURATION NOTE 1 are met, and vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

SYMBOLS

- Work Area
- Work Zone Sign
- Advance Warning Arrow Board
- Type III Barricade
- Channelizing Device (See Index 102-600)
- Lane Identification + Direction of Traffic

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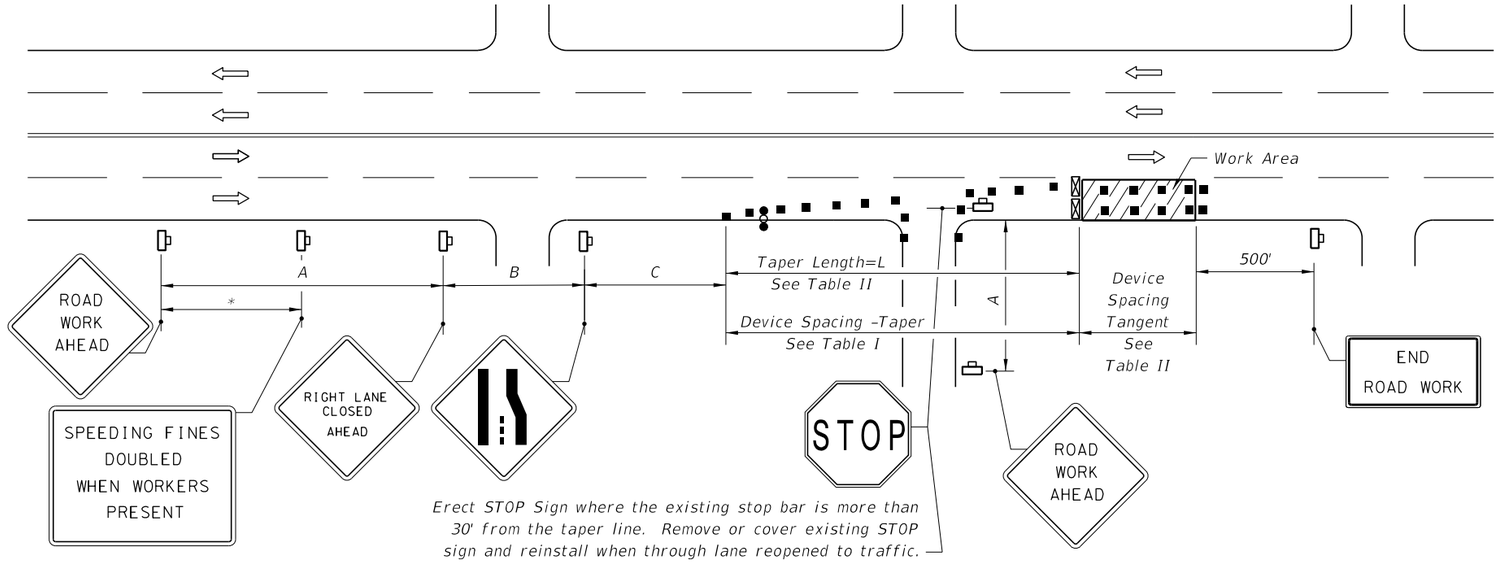
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	MULTILANE, WORK NEAR INTERSECTION MEDIAN OR OUTSIDE LANE	INDEX	SHEET
11/01/17						102-616	1 of 3

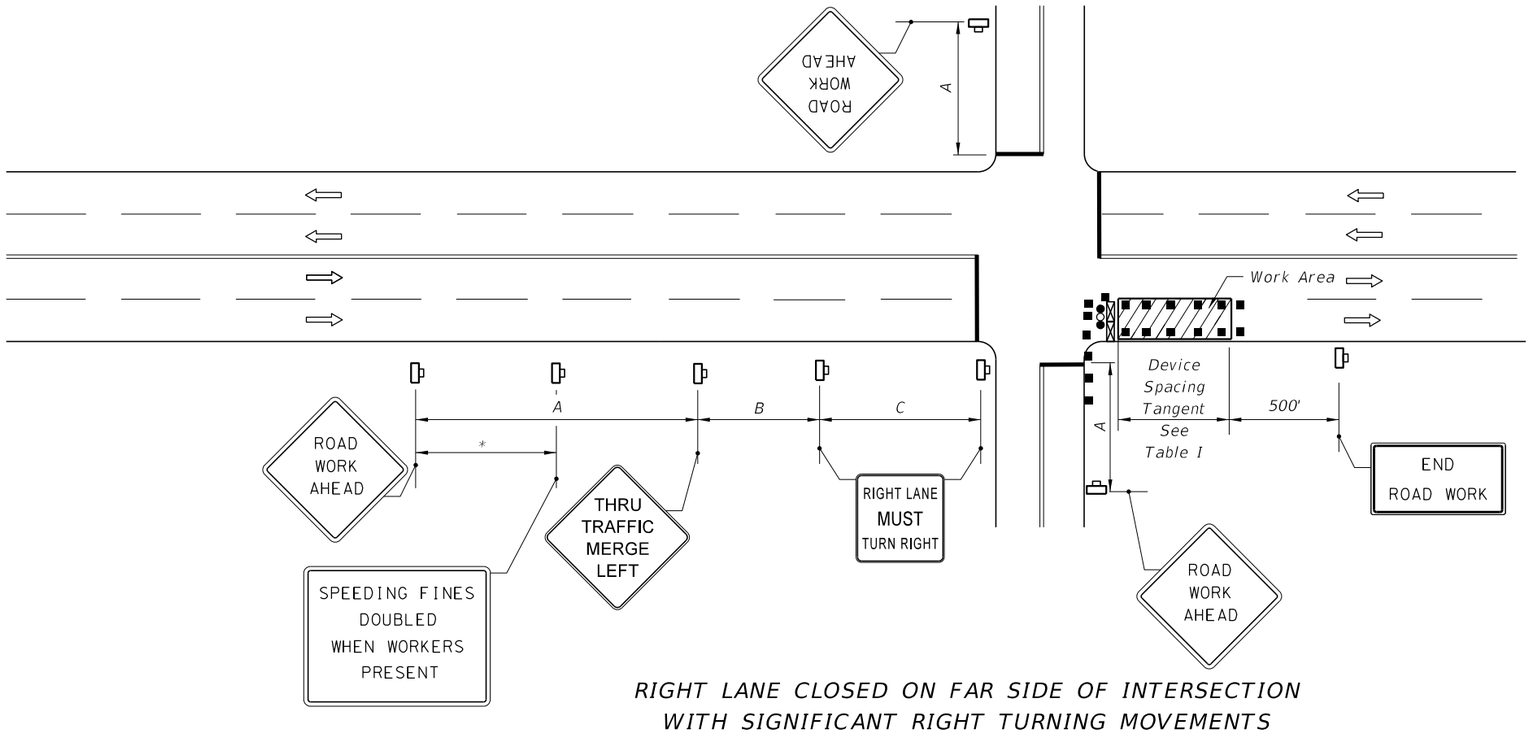


RIGHT LANE CLOSED ON FAR SIDE OF MINOR SIDESTREET

DISTANCE BETWEEN SIGNS			
Speed	Spacing (ft.)		
	A	B	C
40 mph or less	200	200	200
45 mph	350	350	350

* 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

Table I Device Spacing				
Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50



RIGHT LANE CLOSED ON FAR SIDE OF INTERSECTION
WITH SIGNIFICANT RIGHT TURNING MOVEMENTS

Table II Taper Length - Merge (12' Lateral Transition)		
Speed (mph)	L (ft)	Notes (Merge)
25	125	$L = \frac{WS^2}{60}$
30	180	
35	245	
40	320	
45	540	L=WS

For lateral transitions other than 12', use formula for L shown in the notes column. Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

1. *The normal procedure is to close on the near side of the intersection any lane that is not carried through the intersection. However, when this results in the closure of a right lane having significant right turning movements, then the right lane may be restricted to right turns only as shown in this detail.*
2. *For intersection approaches reduced to a single lane, left turning movements may be prohibited to maintain capacity for through vehicular traffic.*

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LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
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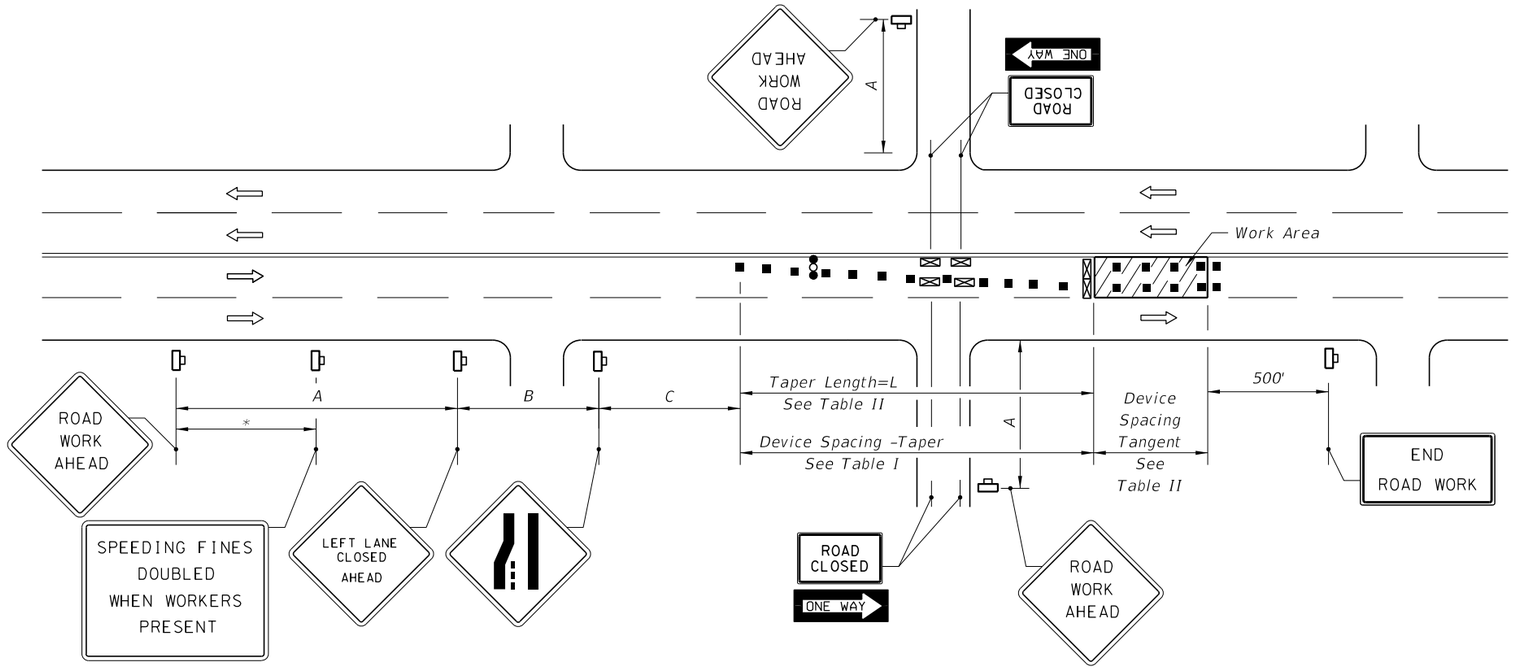
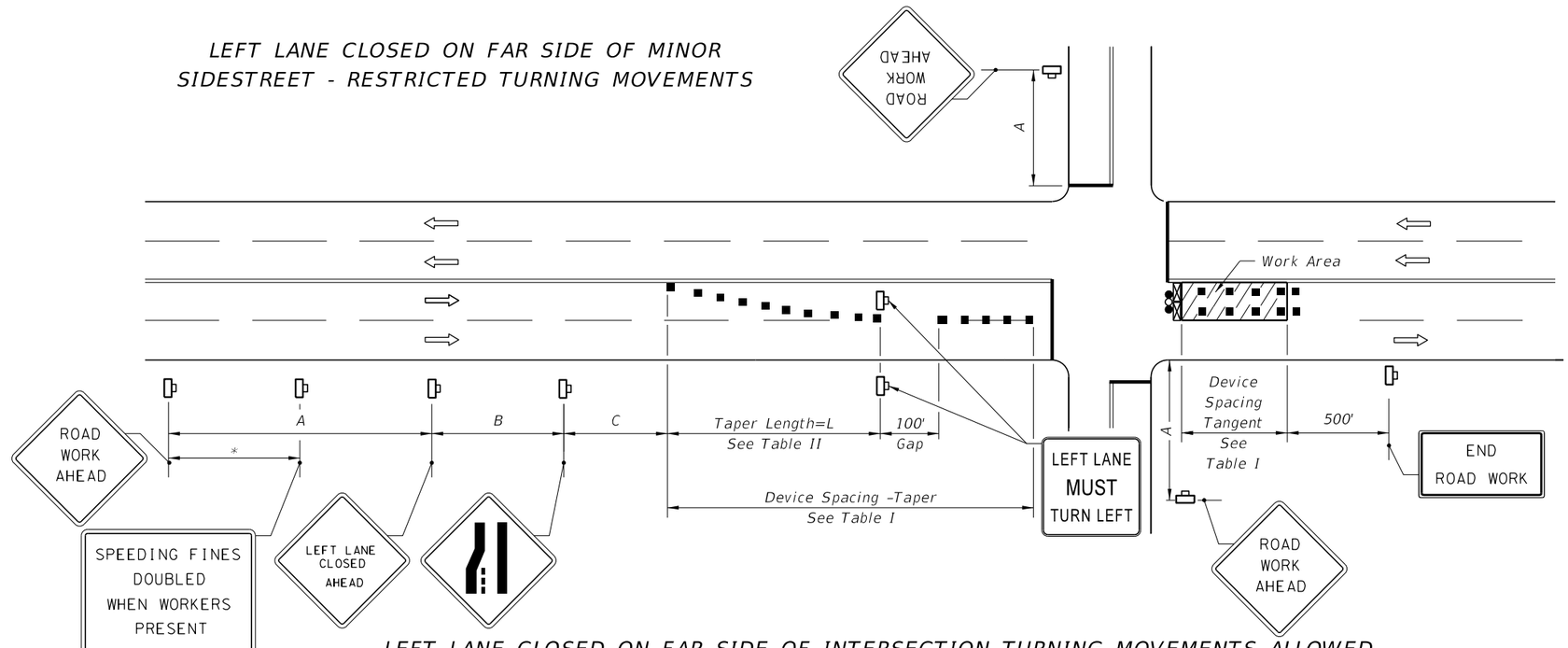
MULTILANE, WORK NEAR INTERSECTION MEDIAN OR OUTSIDE LANE



LEFT LANE CLOSED ON FAR SIDE OF MINOR SIDESTREET - RESTRICTED TURNING MOVEMENTS



LEFT LANE CLOSED ON FAR SIDE OF INTERSECTION TURNING MOVEMENTS ALLOWED

1. The normal procedure is to close on the near side of the intersection any lane that is not carried through the intersection. However, when this results in the closure of a left lane having significant left turning movements, then the left lane may be reopened as a turn bay for left turns only as show in this detail.

DISTANCE BETWEEN SIGNS			
Speed	Spacing (ft.)		
	A	B	C
40 mph or less	200	200	200
45 mph	350	350	350

* 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

Table I
Device Spacing

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

Table II
Taper Length - Merge
(12' Lateral Transition)

Speed (mph)	L (ft.)	Notes (Merge)
25	125	$L = \frac{WS^2}{60}$
30	180	
35	245	
40	320	
45	540	L = WS

For lateral transitions other than 12', use formula for L shown in the notes column. Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

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LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT	FY 2019-20 STANDARD PLANS	MULTILANE, WORK NEAR INTERSECTION MEDIAN OR OUTSIDE LANE	INDEX 102-616 / SHEET 3 of 3

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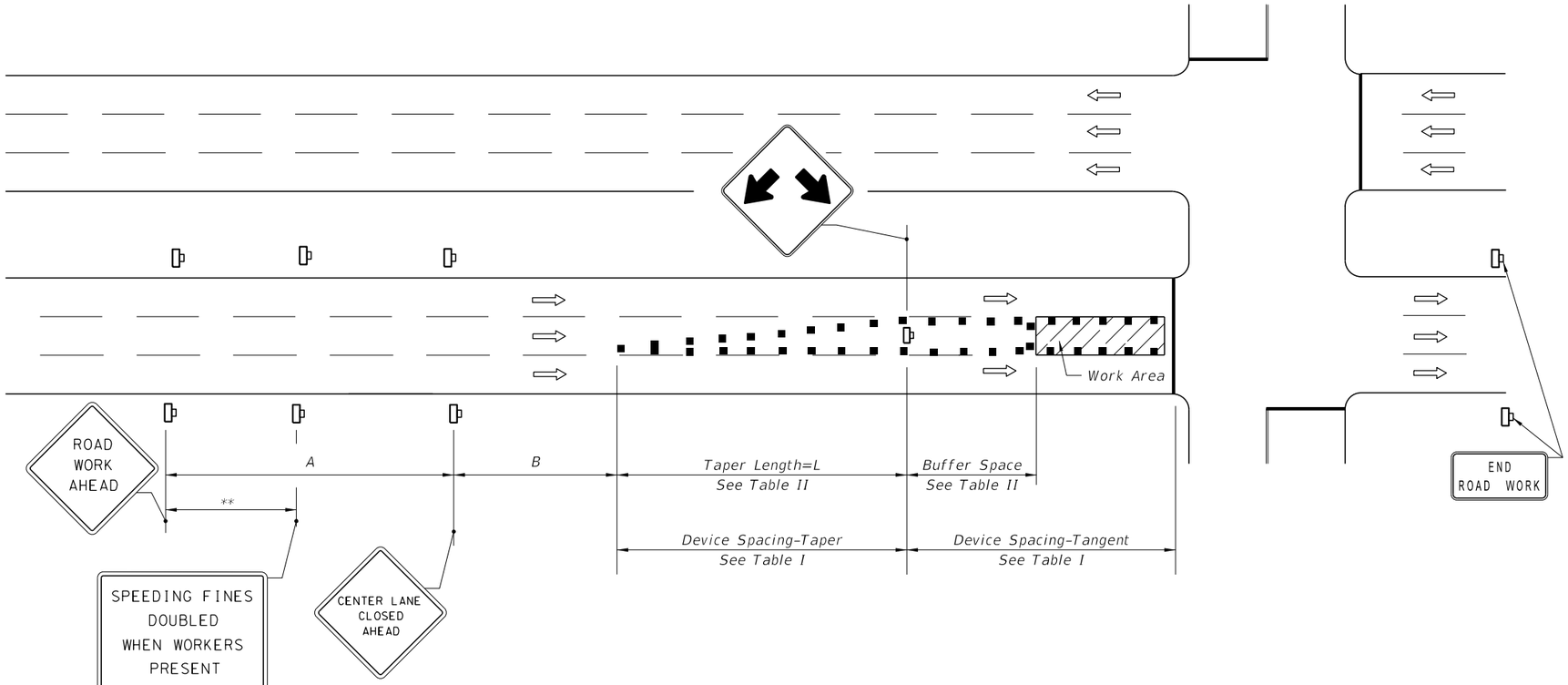


** 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

DISTANCE BETWEEN SIGNS		
Speed	Spacing (ft.)	
	A	B
40 mph or less	200	200
45 mph	350	350

Table I
Device Spacing

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

Table II
Buffer Space and Taper Length

Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)	
	Dist. (ft.)	L (ft.)	Notes (Merge)
25	155	125	$L = \frac{WS^2}{60}$
30	200	180	
35	250	245	
40	305	320	
45	360	540	L = WS

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in the notes column.
Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. Work operations shall be confined to one center travel lane, leaving the adjacent travel lanes open to traffic.
2. The merging taper shall direct vehicular traffic into either the right or left lane, but not both.
3. When vehicles in a parking zone block the line of sight to TCZ signs, the signs shall be post mounted and located in accordance with Index 700-101.
4. If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index 102-660.
5. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES

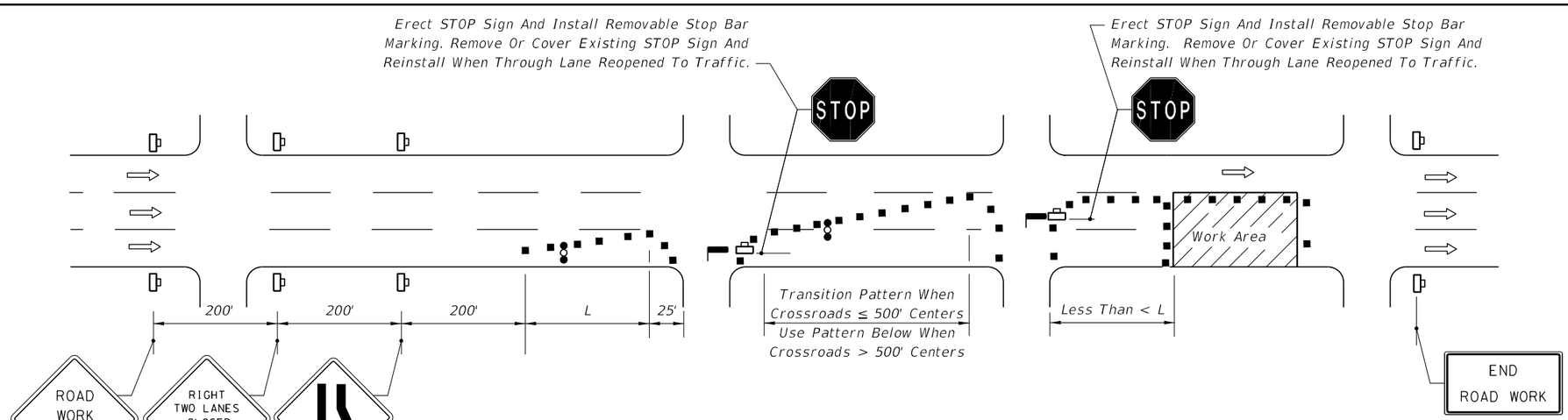
1. Signs and buffer space may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed limit is 45 mph or less.
   c. No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space and the taper length combined.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF THE CENTER LANE NEAR AN INTERSECTION.

9/18/2018 10:37:27 AM

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/17			FDOT FY 2019-20 STANDARD PLANS	MULTILANE, WORK IN INTERSECTION CENTER LANE	102-617	1 of 1



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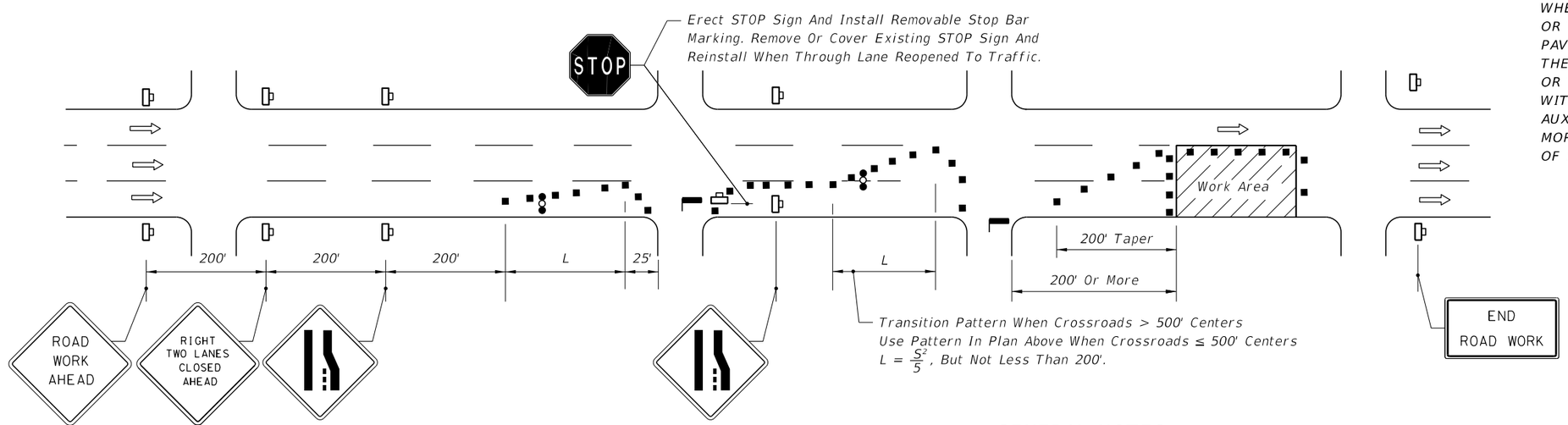


CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF EITHER THE OUTSIDE AND CENTER TRAVEL LANES OR THE MEDIAN AND CENTER TRAVEL LANES, WITH OR WITHOUT CLOSURE OF ADJOINING AUXILIARY LANES, FOR WORK AREA LESS THAN 200' FROM INTERSECTION, FOR A PERIOD OF MORE THAN 60 MINUTES.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF EITHER THE OUTSIDE AND CENTER TRAVEL LANES OR THE MEDIAN AND CENTER TRAVEL LANES, WITH OR WITHOUT CLOSURE OF ADJOINING AUXILIARY LANES, FOR WORK AREA 200' OR MORE FROM INTERSECTION, FOR A PERIOD OF MORE THAN 60 MINUTES.

Table II
Taper Length - Merge
(12' Lateral Transition)

Speed (mph)	L (ft.)	Notes (Merge)
25	125	$L = \frac{WS^2}{60}$
30	180	
35	245	
40	320	
45	540	L = WS

For lateral transitions other than 12', use formula for L shown in the notes column. Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Stop Bar
- Lane Identification + Direction of Traffic

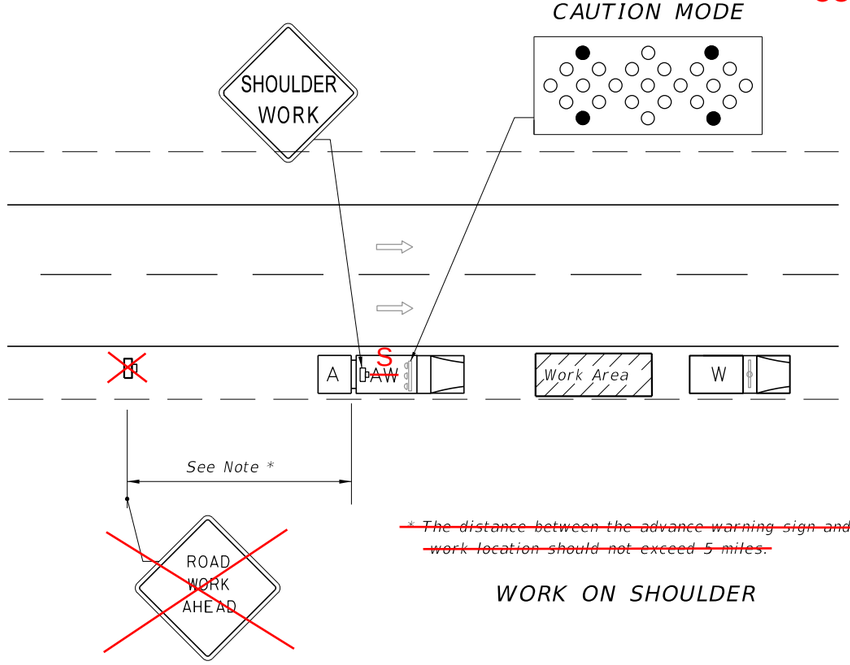
GENERAL NOTES

1. If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index 102-660.
2. Signs are required on the median side for divided highways.
3. The two channelizing devices directly in front and directly at the end of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
4. Within the lateral transitions, the maximum spacing between cones and tubular markers shall be 25'. Maximum spacing between Type I or Type II barricades or vertical panels or drums shall be based on the speed limit as follows: 15' up to 25 MPH; 30' for 30-40 MPH; 50' for 45 MPH.

   Spacing for devices parallel to the travel lanes shall be 25' centers for cones or tubular markers and 50' centers for Type I or Type II barricades or vertical panels or drums for 250', thereafter, cones or tubular markers at 50' centers and Type I or Type II barricades or vertical panels or drums at 100' centers.
5. For general TCZ requirements and additional information, refer to Index 102-600.

COMBINED WITH 102-607.

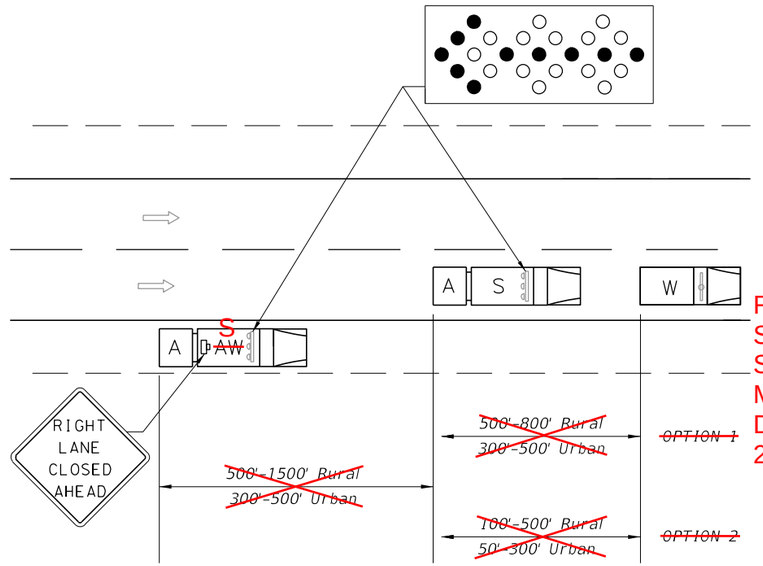
CAUTION MODE



~~* The distance between the advance warning sign and the work location should not exceed 5 miles.~~

WORK ON SHOULDER

MOVE/MERGE MODE



REVISED TO SHOW DIFFERENT SCENARIO. MOVED THIS DETAIL TO SHEET 2.

~~OPTION 1:~~ Advanced Warning Vehicle may be operated in the lane behind the Shadow Vehicle where adequate shoulder width is not available. Approved Truck Mounted Attenuators are required on both the Advance Warning Vehicle and the Shadow Vehicle.

~~OPTION 2:~~ Advance Warning Vehicle must be operated in the lane behind the Shadow Vehicle. Approved Truck Mounted Attenuators are required on both the Advance Warning Vehicle and the Shadow Vehicle.

~~WORK WITHIN TRAVEL LANE~~
~~(Option 1 Shown, Option 2 Similar)~~

WORK IN TRAVELED WAY - TWO-LANE ROADWAY, LANE CLOSURE

REVISED.

SYMBOLS

- W — Work Vehicle
- S — Shadow (S) Vehicle with Arrow Board
- AW — Advance Warning (AW) Vehicle with Arrow Board and Sign Message or Changeable Message Sign
- A — Truck/Trailer Mounted Attenuator (TMA)
- Lane Identification And Direction Of Traffic
- Arrow Board

GENERAL NOTES

~~1. These illustrations are representative of general conditions.~~

~~2. The figures illustrate closing the right shoulder or right lanes for various lane configurations. When work is required on left side of roadways, the inverted plan is to be applied. The intent of this index is to allow passing on only one side of the work convoy.~~

~~3. Arrow boards shall not be obscured by equipment, supplies, signs, or the enclosure.~~

1. ~~4.~~ Vehicle-mounted signs shall be mounted with the bottom of the sign at a minimum height of 48 inches above the pavement. Vehicle mounted changeable message signs may be used in lieu of truck mounted static signs. Changeable message signs shall flash alternately to read "Left or Right Lane" or "Two Left or Two Right Lanes", "Closed Ahead", and the arrow symbol. Arrow boards shall not be used with truck mounted changeable message signs. Sign legends shall be covered or turned from view when work is not in progress.

~~5. On freeway facilities (interstates, toll roads, and expressways), a traffic control officer is required for all nighttime non-emergency operations for work within the travel lane.~~

6. If the work vehicle speed exceeds the minimum legal speed limit on limited access facilities and one half the posted speed limit on other facilities, the Engineer may delete requirements for shadow vehicle and attenuator. The work vehicle will be required to have an arrow board and sign message.

~~7. Where work activities within 2' of the edge of travel way are Incidental (i.e. Mowing, Litter Removal), the Engineer may delete requirements for signs and the advance warning vehicle provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.~~

~~8. Work, Shadow, and Advance Warning Vehicles shall have high-intensity, rotating, flashing, oscillating, or strobe lights operating.~~

5. ~~9.~~ Functional two-way communication is required between all vehicles in the mobile operation convoy.

~~10. For general TCZ requirements and additional information, refer to Index 102-600.~~

ADDED NEW NOTES 2, 3 & 4.

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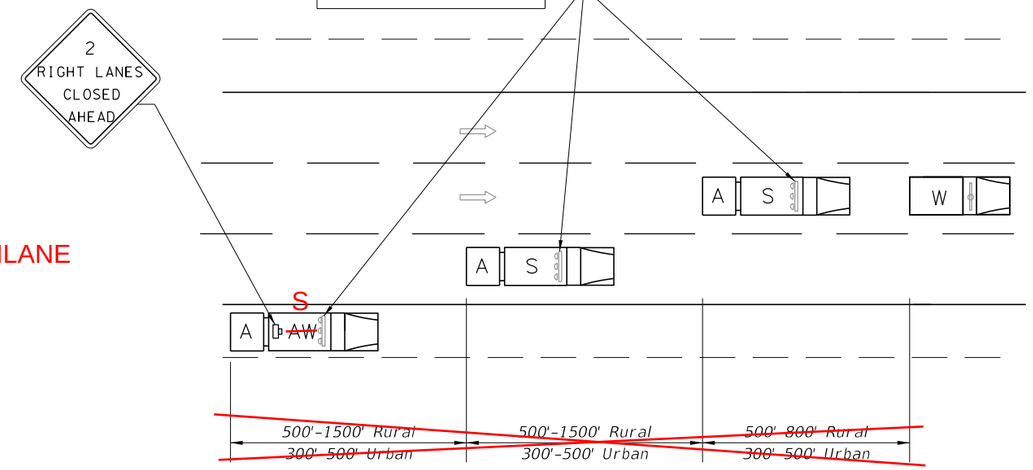
LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	MOBILE OPERATIONS — MULTILANE, MOBILE OPERATIONS WORK ON SHOULDER, WORK WITHIN TRAVEL WAY	INDEX 102-619	SHEET 1 of 2

102-015

ADDED "WORK IN TRAVELED WAY - MULTILANE ROADWAY, SINGLE LANE CLOSURE"

MOVE/MERGE MODE

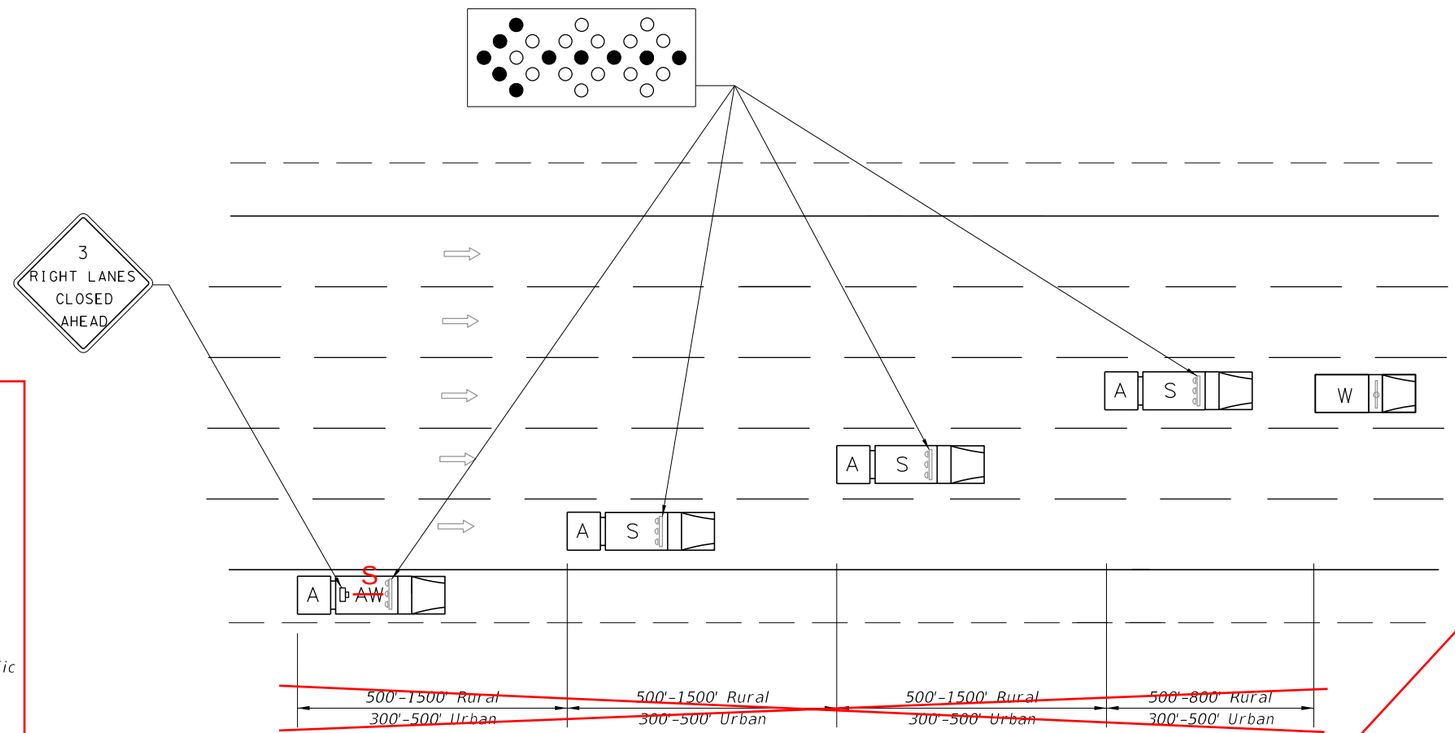


~~WORK WITHIN TRAVEL WAY, CENTER LANE OR OUTSIDE CENTERLINE~~

~~Where adequate shoulder width is not available, the advance warning vehicle may drive in the lane.~~

WORK IN TRAVELED WAY - MULTILANE ROADWAY, DOUBLE LANE CLOSURE

MOVE/MERGE MODE



REVISED.

SYMBOLS

- W — Work Vehicle
- S — Shadow (S) Vehicle with Arrow Board
- AW — Advance Warning (AW) Vehicle with Arrow Board and Sign Message or Changeable Message Sign
- A — Truck/Trailer Mounted Attenuator (TMA)
- Lane Identification And Direction Of Traffic
- Arrow Board

WORK IN TRAVELED WAY - MULTILANE ROADWAY, TRIPLE LANE CLOSURE

~~WORK WITHIN TRAVEL LANE~~

MOBILE OPERATIONS

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LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	MULTILANE, MOBILE OPERATIONS WORK ON SHOULDER, WORK WITHIN TRAVEL WAY	INDEX	SHEET
11/01/17						102-619	2 of 2

102-015

Combined this Index with Index 102-621 and redeveloped into Index 102-060.

GENERAL NOTES

1. TWO-WAY TRAFFIC sign(s) shall be repeated every ¼ mile in each direction, throughout the tangent distance (T).

2. L (min.) $= WS$ for speeds $\geq$ 45 mph
   $= \frac{WS^2}{60}$ for speeds $\leq$ 40 mph

   Where:
   W= Width of lateral transition in feet.
   S= Posted speed limit (mph).

3. Where the tangent distance (T) exceeds 250', spacing between Type I or II barricades or vertical panels or drums may be increased to 100' within the limits of the tangent, or post mounted delineators at 50' centers may be substituted for barricades, vertical panels or drums.

4. All existing pavement markings within the realignment which conflict with the revised traffic pattern are to be removed and removable pavement markings used for making new edge lines.

5. When side roads, cross roads or interchanges intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.

6. For general TCZ requirements and additional information, refer to Index 102-600.

SCHEME APPLICATIONS

Scheme 1: Restricted Construction Limits.

Scheme 2: Unrestricted Construction Limits And Light To Moderate Traffic.

Scheme 3: Unrestricted Construction Limits And Moderate To Heavy Traffic.

Where: Construction Limits Are The Outward Beginning Or Ending Of Lane Reductions.

Where: Unless A Specific Scheme Is Called For In The Plans, Scheme Selection Shall Be At The Contractor's Option And As Approved By The Engineer.

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic

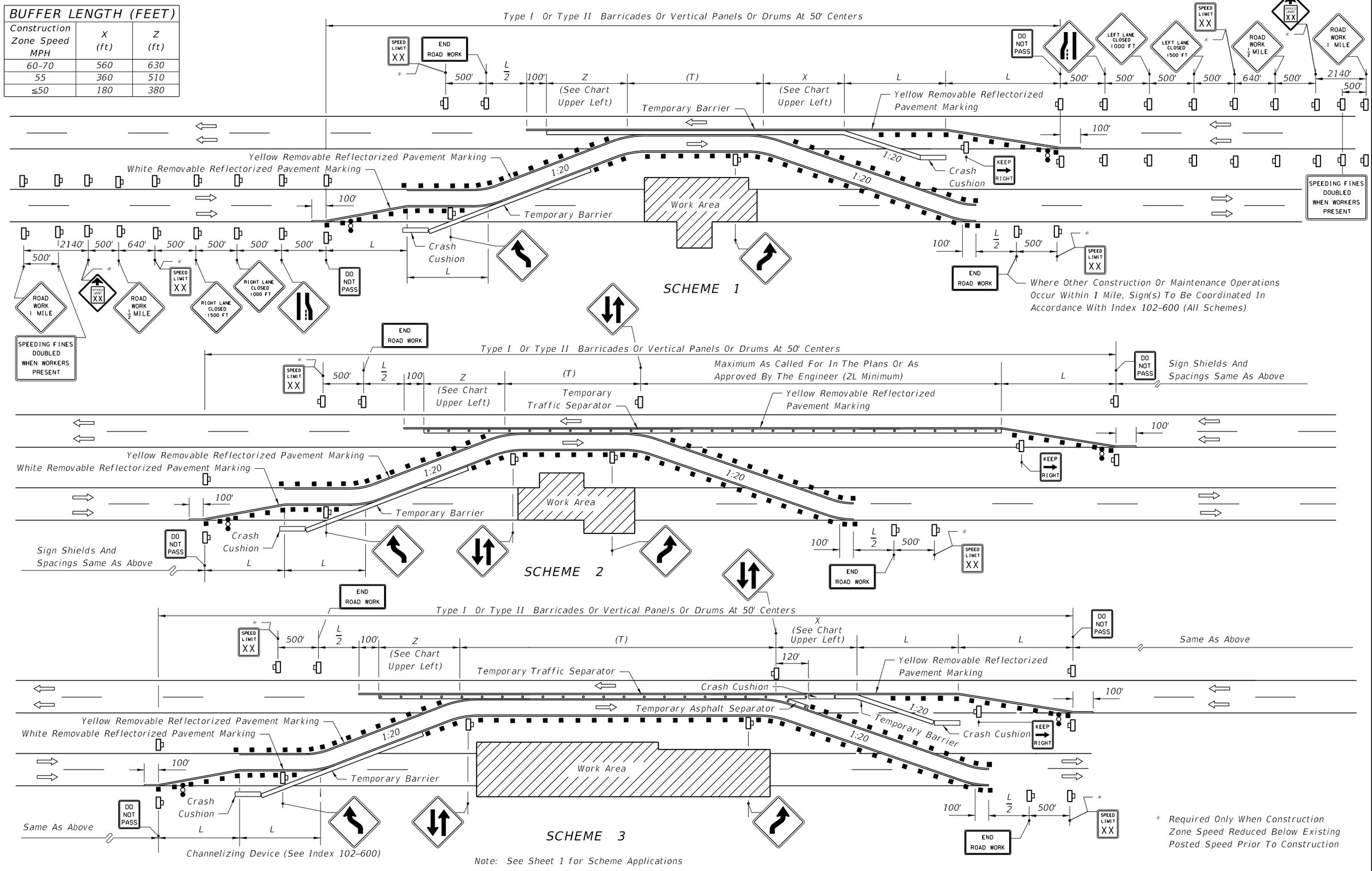
CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES REQUIRE THE CLOSURE OF ONE ROADWAY AND THE OPPOSING ROADWAY IS CONVERTED TO TEMPORARY TWO-WAY TRAVEL BY WAY OF CROSSOVERS.

9/18/2018 10:39:18 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	MULTILANE, DIVIDED TEMPORARY DIVERSION CONNECTION	INDEX 102-620	SHEET 1 of 2

BUFFER LENGTH (FEET)		
Construction Zone Speed MPH	X (ft)	Z (ft)
60-70	560	630
55	360	510
≤50	180	380



Note: See Sheet 1 for Scheme Applications

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FY 2019-20 STANDARD PLANS	MULTILANE, DIVIDED TEMPORARY DIVERSION CONNECTION	INDEX 102-620	SHEET 2 of 2

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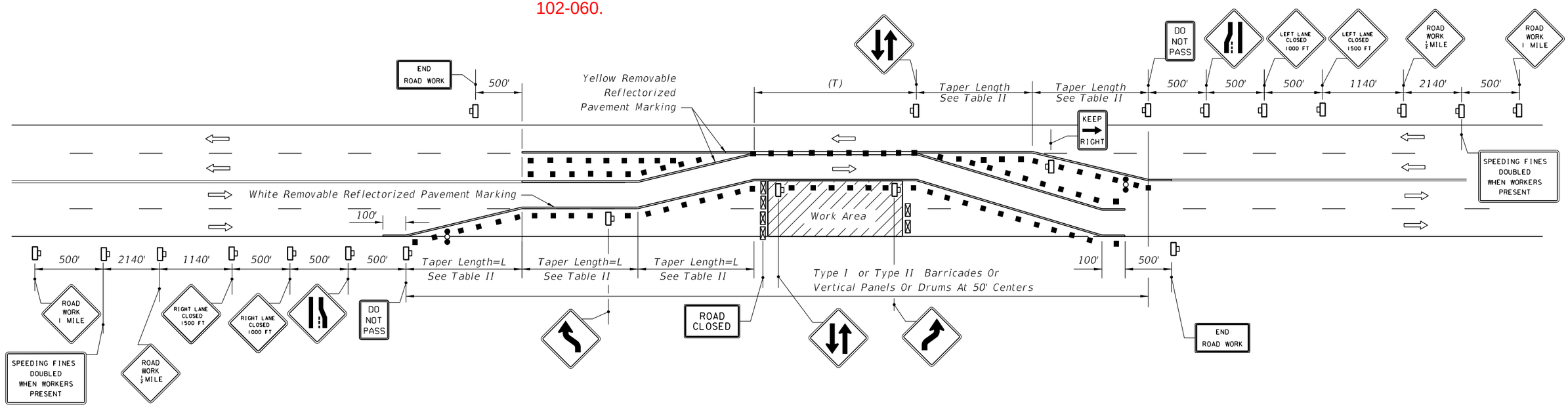
Combined this Index with Index 102-621 and redeveloped into Index 102-060.



SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. TWO-WAY TRAFFIC signs shall be repeated every ¼ mile in each direction, through the tangent distance (T).
2. When paved shoulders having a width of 8 ft. or more are closed, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the travel way. See Index 102-612 for shoulder taper formulas.
3. Where the tangent distance (T) exceeds 250', spacing between cones or tubular markers may be increased to 50' or spacing between Type I or Type II barricades or vertical panels or drums may be increased to 100' within the limits of the tangent.
4. This index does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special maintenance of traffic details will be required.
5. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
6. For general TCZ requirements and additional information, refer to Index 102-600.

Table II
Taper Length - Merge (12' Lateral Transition)

Speed (mph)	L (ft.)	Notes (Merge)
25	125	$L=\frac{WS^2}{60}$
30	180	
35	245	
40	320	
45	540	L=WS
50	600	
55	660	
60	720	
65	780	
70	840	

For lateral transitions other than 12' use formula for L shown in the notes column.
Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES REQUIRE THE CLOSURE OF THE LANES IN ONE DIRECTION AND A DIVERSION IS PROVIDED BY UTILIZING ONE LANE OF THE OPPOSING TRAFFIC LANES.

9/18/2018 10:39:57 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	MULTILANE, UNDIVIDED TEMPORARY DIVERSION CONNECTION	INDEX	SHEET
11/01/17						102-621	1 of 1

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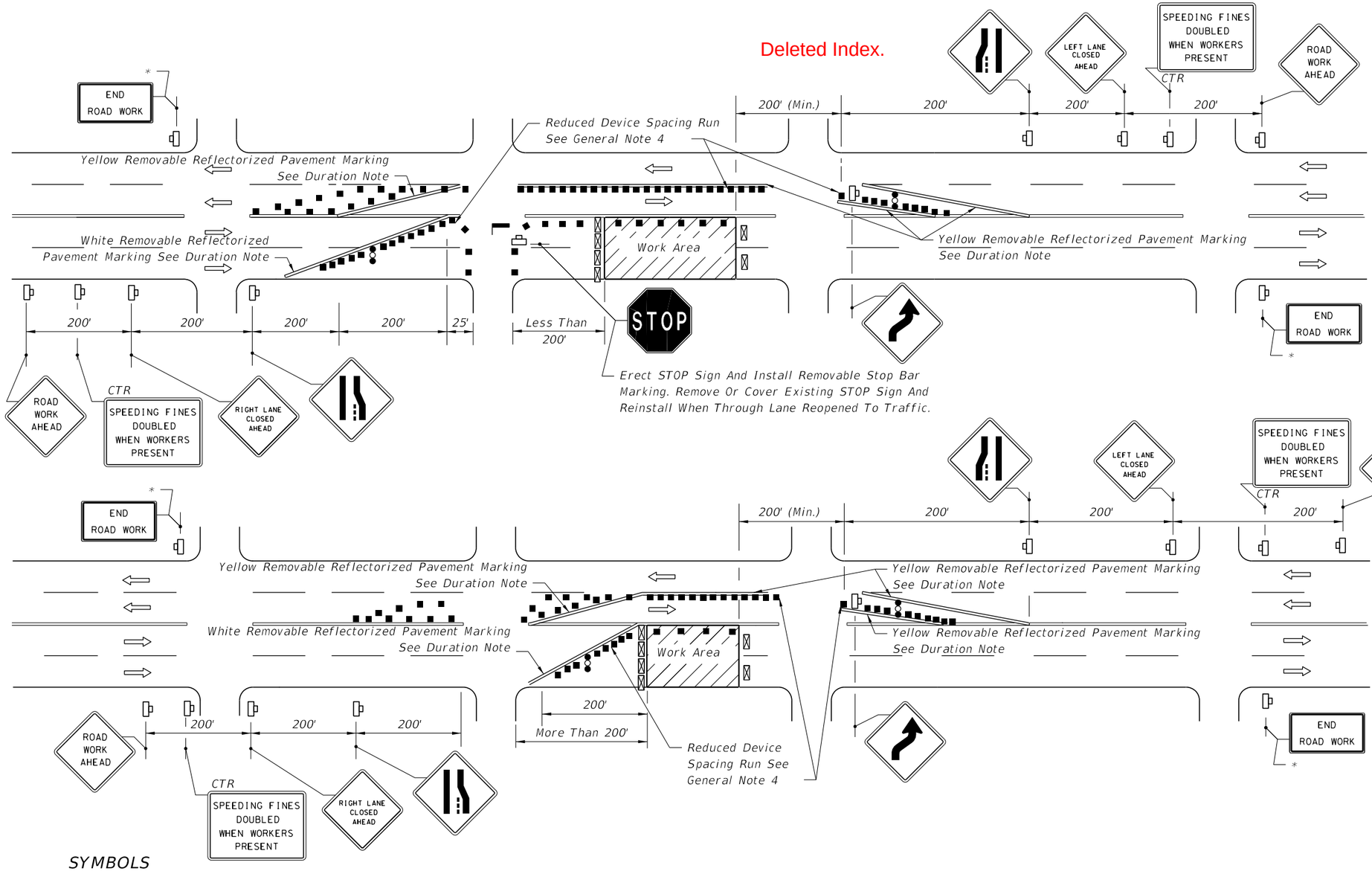


CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF TRAFFIC LANES IN ONE DIRECTION AND THE USE OF ONE OPPOSING TRAFFIC LANE TO MAINTAIN TWO-WAY TRAFFIC, FOR WORK AREA LESS THAN 200' FROM INTERSECTION, FOR A PERIOD OF MORE THAN 60 MINUTES.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF TRAFFIC LANES IN ONE DIRECTION AND THE USE OF ONE OPPOSING TRAFFIC LANE TO MAINTAIN TWO-WAY TRAFFIC, FOR WORK AREA 200' OR MORE FROM INTERSECTION, FOR A PERIOD OF MORE THAN 60 MINUTES.

* When Other Construction Or Maintenance Operations Occur Within 1 Mile, Sign To Be Omitted And Signing To Be Coordinated In Accordance With Index 102-600.

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Advance Warning Arrow Board
- Stop Bar
- Lane Identification + Direction of Traffic

GENERAL NOTES

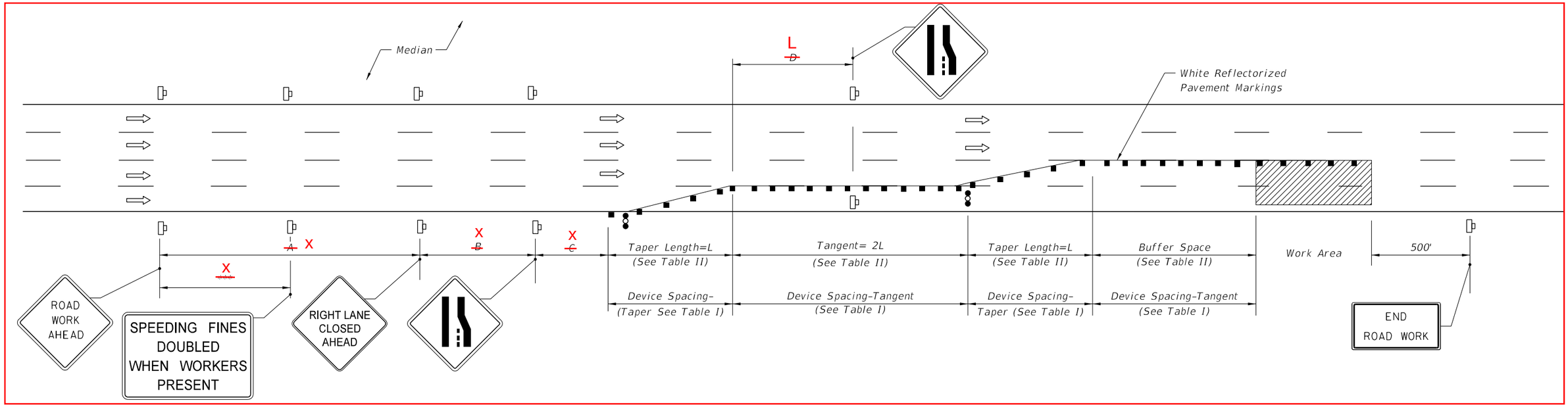
1. When vehicles in a parking zone block the line of sight to TCZ signs or when TCZ signs encroach on a normal pedestrian walkway, the signs shall be post mounted and located in accordance with Index 700-101.
2. Dual signs are required for divided roadways.
3. Channelizing devices are to be spaced with Type I or Type II barricades or vertical panels or drums at 30' centers in tapers, 50' centers in tangent sections and 15' centers where reduced device spacing runs are identified in the drawing.
4. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTE

Removable reflectorized pavement markings shall be used when closure time exceeds one daylight period.

9/18/2018 10:40:24 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	MULTILANE WORK NEAR INTERSECTION-TEMPORARY DIVERSION CONNECTION - 35 MPH OR LESS	INDEX	SHEET
07/01/15						102-622	1 of 1



REVISED

ADDED SHEET 2 SHOWING
TRIPLE LANE CLOSURE.

DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.)			
	A	B	C	D**
40 mph or less	200	200	200	L
45 mph	350	350	350	L
50 mph	500	500	500	L
*55 mph or greater	2640	1640	1000	L

* The ROAD WORK 1 MILE sign may be used as an alternate to the ROAD WORK AHEAD sign MILE sign may be used as an alternate to the RIGHT LANE CLOSED AHEAD sign.

** See Table II for L

*** 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades 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

Table II
Buffer Space and Taper Length

Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)		Tangent
	Dist. (ft.)	L (ft.)	Notes (Merge)	2L (ft.)
25	155	125	$L = \frac{WS^2}{60}$	250
30	200	180		360
35	250	245		490
40	305	320		640
45	360	540	L = WS	1080
50	425	600		1200
55	495	660		1320
60	570	720		1440
65	645	780		1560
70	730	840		1680

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in the notes column.
Where:
L= Length of taper in feet
W= Width of lateral transition in feet
S= Posted speed limit (mph)

~~GENERAL~~ NOTES

1. Work operations shall be confined to the two outside traffic lanes, leaving the adjacent lane(s) open to traffic.
2. On undivided highways the median signs as shown are to be omitted.
3. When work is performed in the median lane on divided highways, the channelizing device plan is inverted and left lanes closed and lane ends signs substituted for the right lanes closed and lane end signs.
4. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
5. For general TCZ requirements and additional information, refer to Index 102-600.
6. When paved shoulders having a width of 8 ft. or more are closed, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the travel way. See Index 102-612 for shoulder taper formulas.

Added notes 1, 2, 3 & 4.

REVISED

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board

~~DURATION~~

Temporary white edgeline may be omitted for work operations less than three (3) days.

~~CONDITIONS~~

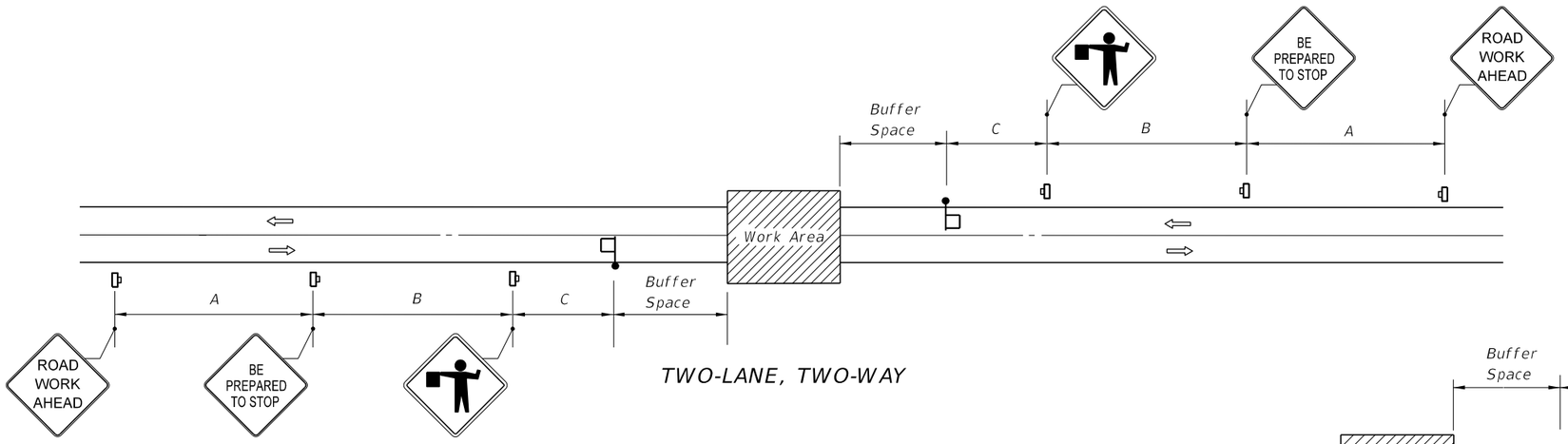
~~WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE TWO LANES ADJACENT TO EITHER SHOULDER.~~

MULTILANE ROADWAY, MULTIPLE LANE CLOSURE

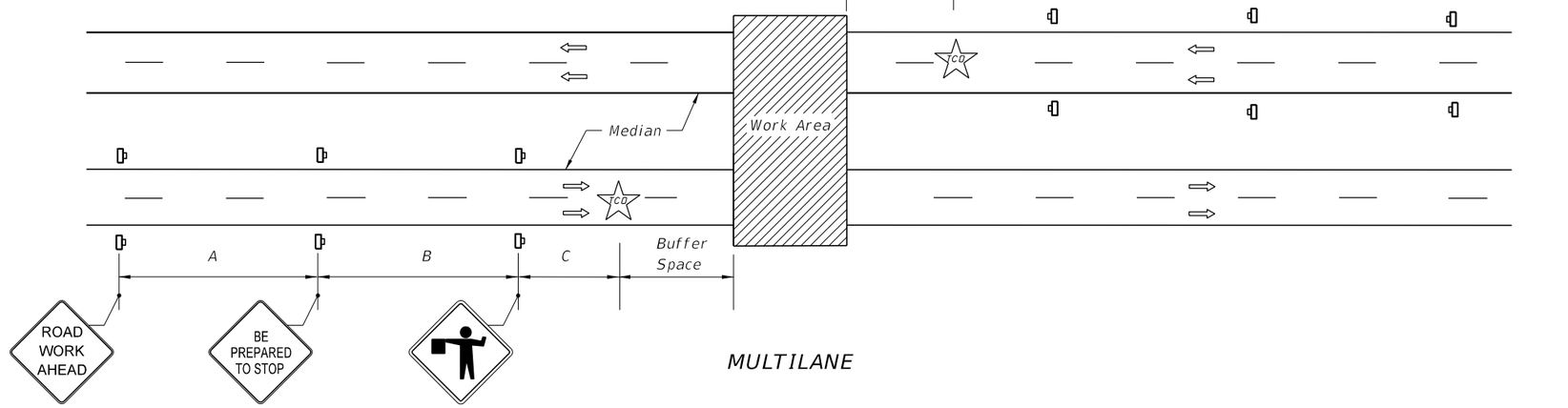
102-050

10/16/2017 8:12:27 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT	FY 2018-19 STANDARD PLANS	MULTILANE, WORK WITHIN THE TRAVEL WAY DOUBLE LANE CLOSURE	INDEX 102-623	SHEET 1 of ~~1~~ 2



TWO-LANE, TWO-WAY



MULTILANE

Revised

BUFFER SPACE	
Speed (mph)	Dist. (ft.)
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

DISTANCE BETWEEN SIGNS			
Speed (mph)	Spacing (ft.)		
	A	B	C
40 or less	200	200	200
45	350	350	350
50 or greater	500	500	500

SYMBOLS

- Work Area
- Work Zone Sign
- Flagger
- TCO Traffic Control Officer
- Lane Identification + Direction of Traffic

Revised

~~GENERAL~~ NOTES

Note 2

1. This Index does not apply to limited access facilities.
2. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with applicable TCZ Indexes.
3. Traffic volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
4. The buffer space may be omitted if there are no sight obstructions to vehicles approaching the Flagger/Officer for distance equal to the buffer space.
5. A Flagger may be substituted for a Traffic Control Officer and the BE PREPARED TO STOP sign may be omitted, when the following conditions are met:
   a. Speed limit is 45 mph or less.
   b. No sight obstructions to vehicles approaching the Flagger/Officer for a distance equal to the buffer space.
   c. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
6. On undivided highways the median sign as shown are to be omitted.
7. For general TCZ requirements and additional information refer to Index 102-600.

Added notes 1 & 4.

Note 3

CONDITIONS

PLANNED CLOSURE NOT EXCEEDING 5 MINUTES.

9/18/2018 10:44:27 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	TEMPORARY ROAD CLOSURE 5 MINUTES OR LESS	INDEX	SHEET
11/01/17					102-625	1 of 1

TEMPORARY ROADWAY CLOSURE

102-020

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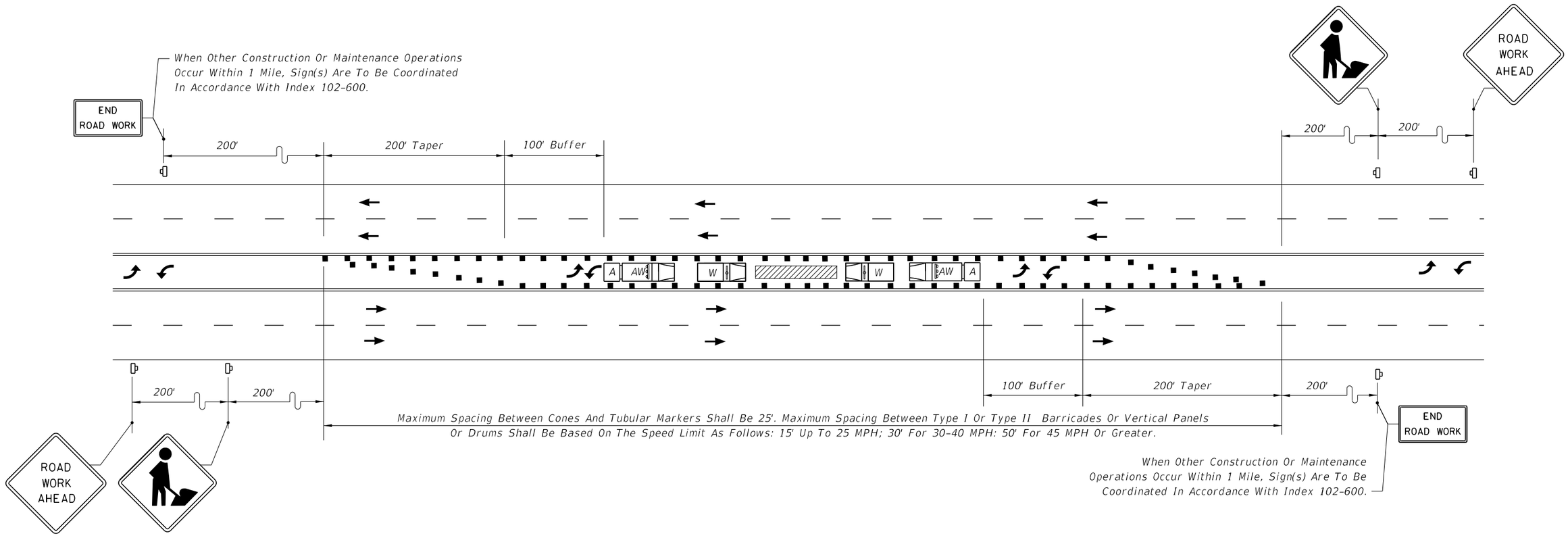


SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- W — Work Vehicle With Rotating/Strobe Lights
- X — Shadow (S) Or Advance Warning (AW) Vehicle with Advance Warning Arrow Board and Sign Message
- A — Truck/Trailer Mounted Attenuator (TMA)

GENERAL NOTES

1. Work operations shall be confined to two way left turn lane, leaving the adjacent lanes open to traffic.
2. Advance Warning Vehicle will have an Advanced Warning Arrow Board in the Warning Mode.
3. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
4. For general TCZ requirements and additional information, refer to Index 102-600.

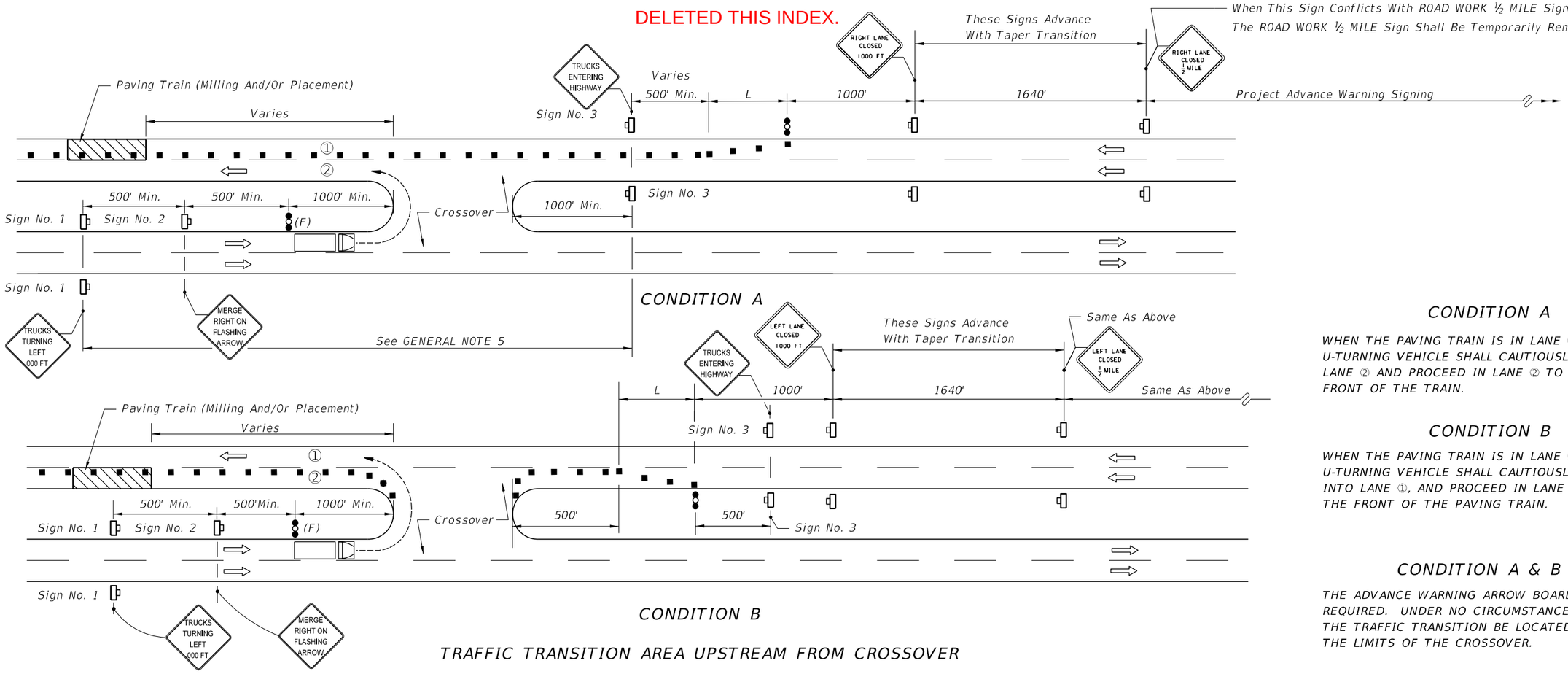
CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ARE BEING CONDUCTED IN THE TWO WAY LEFT TURN LANE.

9/18/2018 10:45:21 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TWO WAY LEFT TURN LANE CLOSURE	INDEX	SHEET
11/01/17						102-628	1 of 1

DELETED THIS INDEX.



CONDITION A

CONDITION B

TRAFFIC TRANSITION AREA UPSTREAM FROM CROSSOVER

CASE I

SYMBOLS

- Work Area
- ■ Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board – Type C (48"x 96")
- (F) Advance Warning Arrow Board – Type C (48"x 96") Trailer Mounted And Actuated By Flagger Upon Approach Of The Work Vehicle
- Work Vehicle
- (X) Lane Number
- Lane Identification + Direction of Traffic

CONDITION A

WHEN THE PAVING TRAIN IS IN LANE ① THE U-TURNING VEHICLE SHALL CAUTIOUSLY TURN INTO LANE ② AND PROCEED IN LANE ② TO THE FRONT OF THE TRAIN.

CONDITION B

WHEN THE PAVING TRAIN IS IN LANE ② THE U-TURNING VEHICLE SHALL CAUTIOUSLY TURN INTO LANE ①, AND PROCEED IN LANE ① TO THE FRONT OF THE PAVING TRAIN.

CONDITION A & B

THE ADVANCE WARNING ARROW BOARDS ARE REQUIRED. UNDER NO CIRCUMSTANCES WILL THE TRAFFIC TRANSITION BE LOCATED WITHIN THE LIMITS OF THE CROSSOVER.

GENERAL NOTES

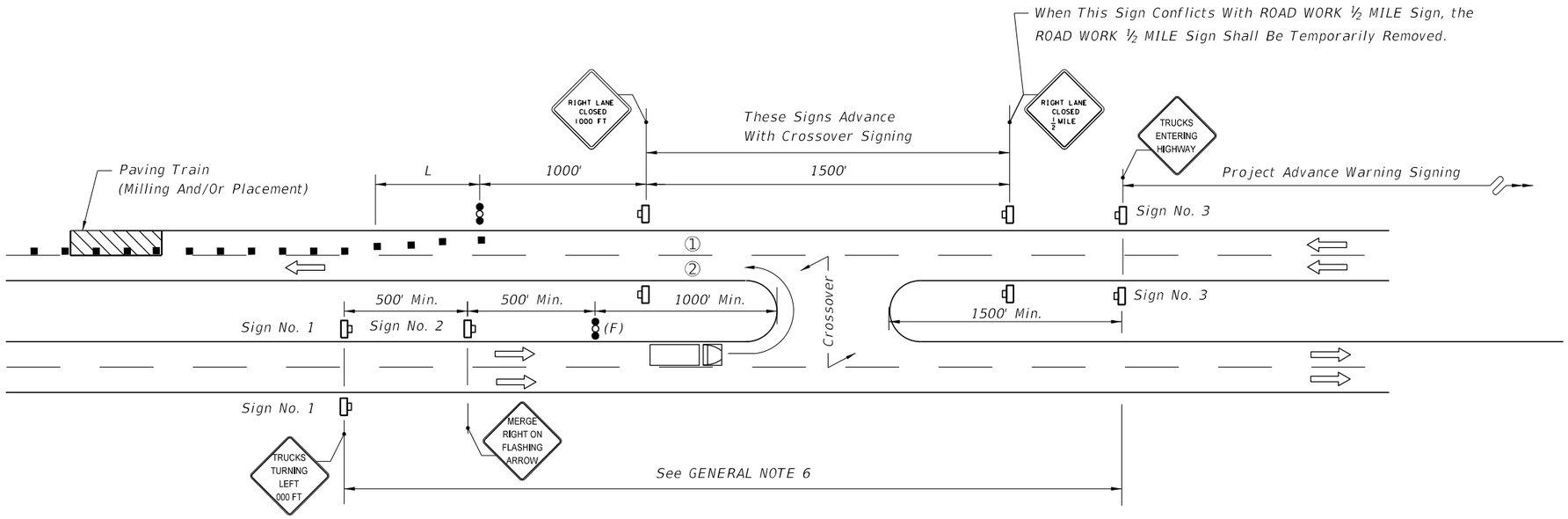
1. This index does not apply to limited access facilities.
2. When crossovers do not exist, the contractor will construct temporary crossovers in accordance with Index 102-631.
3. L = Length of taper in feet:
   = WS for speeds ≥ 45 mph
   = $\frac{WS^2}{60}$ for speeds ≤ 40 mph

   Where:
   W = Width of lateral transition in feet.
   S = Posted speed limit (mph).
4. Within the lateral transitions, the maximum spacing between cones and tubular markers shall be 25'. Maximum spacing between Type I or Type II barricades or vertical panels or drums shall be based on the speed limit as follows: 15' up to 25 MPH; 30' for 30-40 MPH; 50' for 45 MPH or greater.

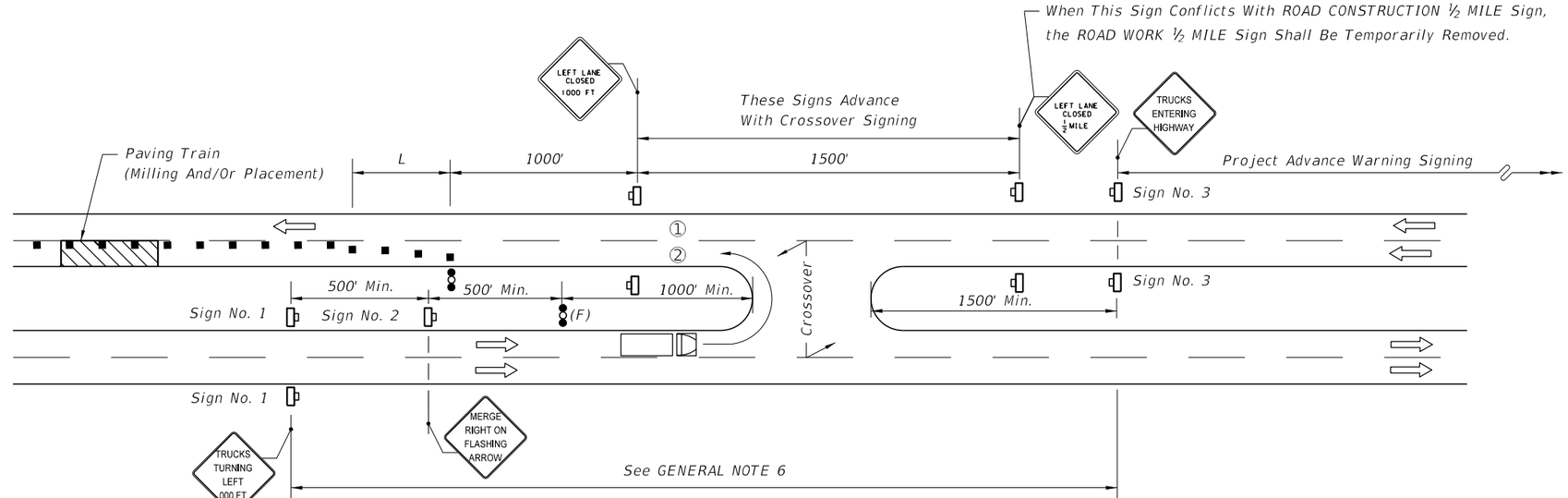
   Spacing for devices parallel to the travel lanes shall be 25' centers for cones or tubular markers and 50' for Type I or Type II barricades or vertical panels or drums.
5. For Case I, Condition A, when the median width is too narrow for trucks to make turns into Lane No. 2, Sign Nos. 1, 2, 3 and the Flagger Actuated Advance Warning Arrow Board shall be moved ahead to a crossover in advance of the paving lane taper. Project advance warning signs (not shown) shall be located in advance of the relocated Sign No. 3.
6. For Case II, Conditions A & B, when the median width is too narrow for trucks to make turns into Lane No. 2, Sign Nos. 1, 2, 3 and the Flagger Actuated Advance Warning Arrow Board shall be moved ahead to a crossover in advance of the 'RIGHT LANE CLOSED ½ MILE' sign. Project advance warning signs (not shown) shall be located in advance of the relocated Sign No. 3.

10/30/2018 8:58:34 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT	FY 2019-20 STANDARD PLANS	CROSSOVER FOR PAVING TRAIN OPERATIONS, RURAL	INDEX 102-630 / SHEET 1 of 2



CONDITION A



CONDITION B

TRAFFIC TRANSITION AREA DOWNSTREAM FROM CROSSOVER

CASE II

CONDITION A

WHEN THE PAVING TRAIN IS IN LANE ① THE U-TURNING VEHICLE SHALL CAUTIOUSLY TURN INTO LANE ② AND PROCEED IN LANE ② TO THE FRONT OF THE TRAIN.

CONDITION B

WHEN THE PAVING TRAIN IS IN LANE ② THE U-TURNING VEHICLE SHALL TURN INTO LANE ②, CAUTIOUSLY MERGE INTO LANE ① AND PROCEED TO THE FRONT OF THE PAVING TRAIN.

CONDITION A & B

THE ADVANCE WARNING ARROW BOARD IS REQUIRED. UNDER NO CIRCUMSTANCES WILL THE TRAFFIC TRANSITION BE LOCATED WITHIN THE LIMITS OF THE CROSSOVER.

Note: See Sheet 1 for General Notes.

10/30/2018 8:58:37 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	CROSSOVER FOR PAVING TRAIN OPERATIONS, RURAL	INDEX	SHEET
11/01/17						102-630	2 of 2

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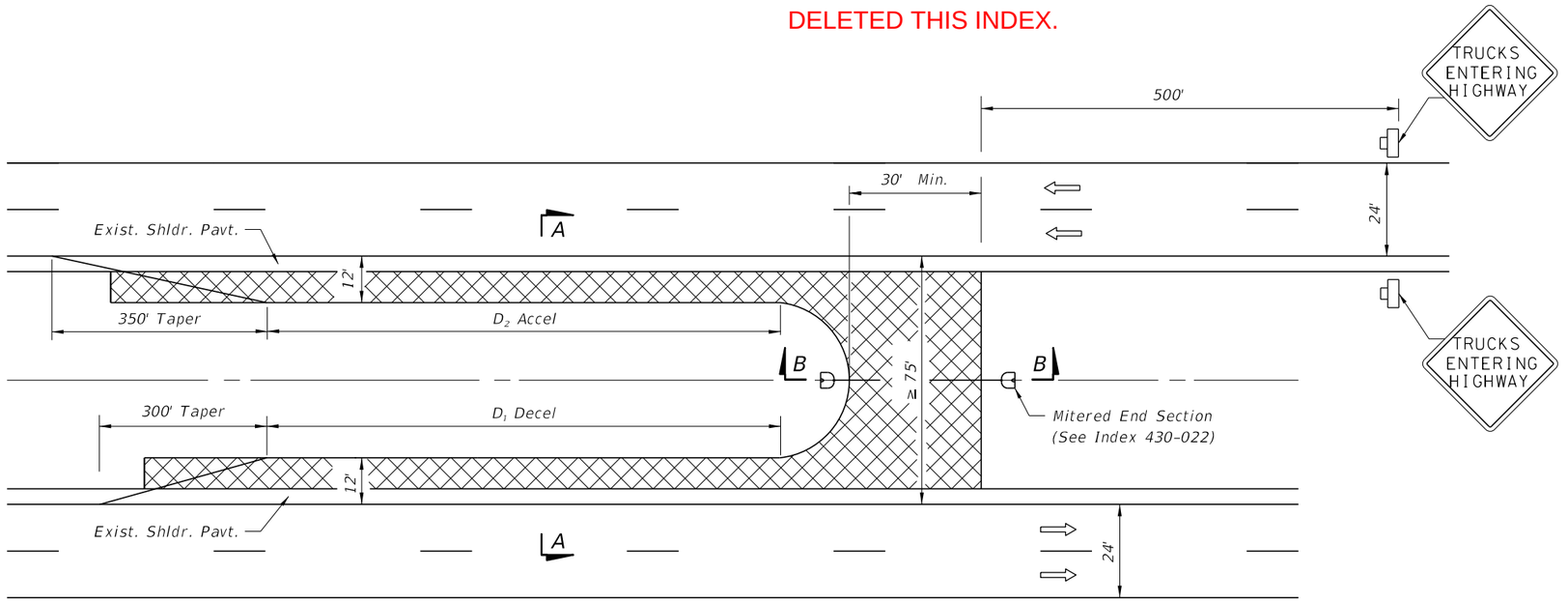
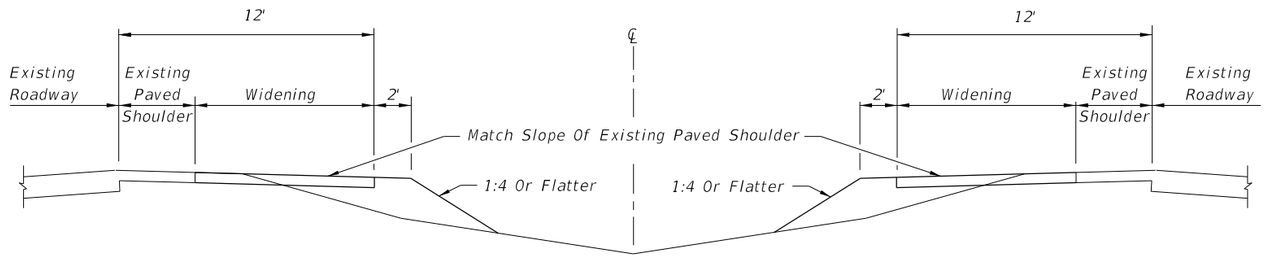
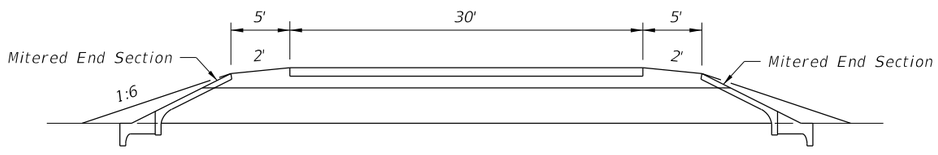


PLAN

LENGTH OF ACCESS LANES (Ft.)		
Grade	D_1	D_2
2% or less	590'	1540'
3 to 4% Upgrade	530'	2310'
3 to 4% Downgrade	710'	925'



SECTION AA



SECTION BB

SYMBOLS

- Work Zone Sign
- Lane Identification + Direction of Traffic
- Temporary Pavement

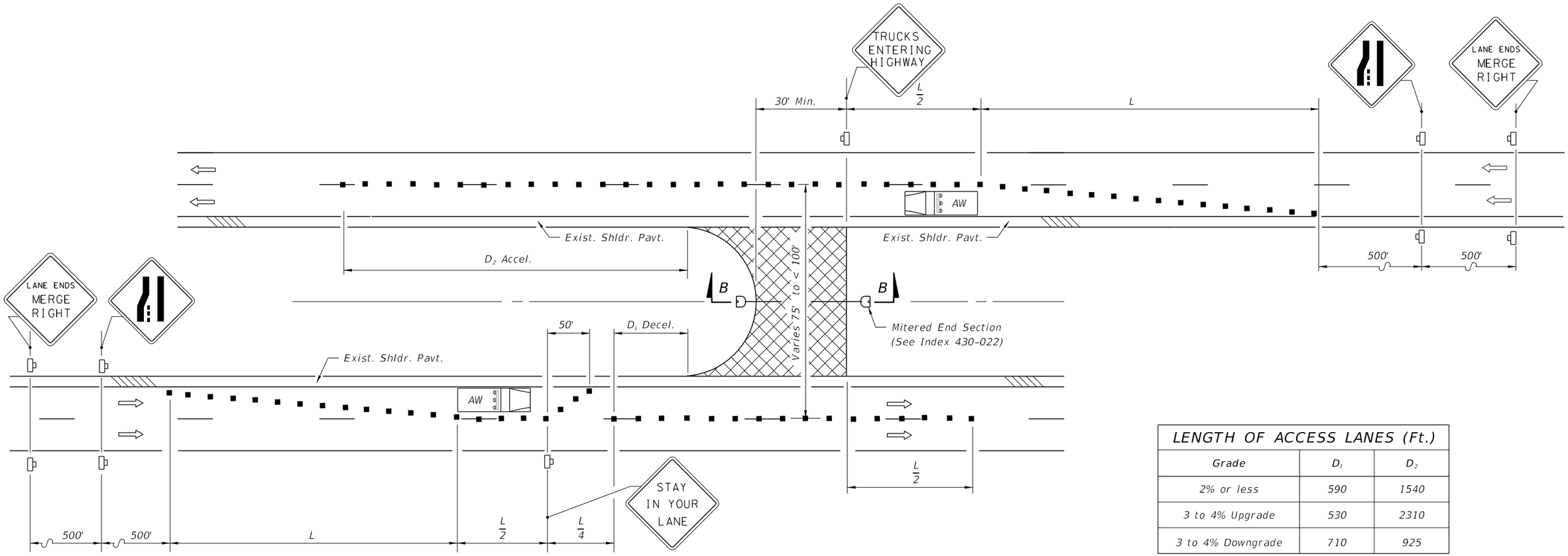
GENERAL NOTES

1. Temporary median crossovers shall be within the project limits and shall not be used for transporting materials to or from any other project. The acceleration-deceleration surfaces shall be paved. RAP material is acceptable for crossing surfacing.
2. Temporary median crossovers shall be located only in areas having adequate sight distance. On limited access facilities temporary median crossovers shall not be located within 1.5 miles of interchanges nor within 2000 ft. of acceleration-deceleration lanes at rest areas, other access openings or other highway service areas.
3. For paving train operations at permanent crossovers, see Index 102-630.
4. All traffic control devices are to be removed when crossover will not be in use for one hour or longer.
5. Trailer mounted advance warning panel may be used in lieu of advance warning vehicle.
6. When a crossover is no longer needed, all temporary construction shall be immediately removed and the area restored to its original condition.
7. Cost of construction, maintenance, removal and restoration work related to temporary crossovers shall be included in the contract unit price for Maintenance of Traffic, LS.
8. Temporary crossovers on limited access right of way and use of this Index are prohibited unless specifically permitted in the Contract Plans or Special Provisions. When permitted in the Contract Plans or Special Provisions and prior to construction of any temporary crossover, the Contractor must submit, in writing, a request identifying specific locations for approval by the Engineer.
9. Pipe and mitered end sections are not required when crossover is located at the high point of a crest vertical curve.

TEMPORARY CROSSOVER FOR MEDIAN WIDTHS ≥ 75'

10/30/2018 9:01:50 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	TEMPORARY CROSSOVER	INDEX	SHEET
11/01/17					102-631	1 of 2



LENGTH OF ACCESS LANES (Ft.)		
Grade	D_1	D_2
2% or less	590	1540
3 to 4% Upgrade	530	2310
3 to 4% Downgrade	710	925

SYMBOLS

- Temporary Pavement
- Work Zone Sign
- Channelizing Device (See Index 102-600)
- AW — Advance Warning Vehicle
- Lane Identification + Direction of Traffic

Maximum Spacing Between Cones And Tubular Markers Shall Be 25'

L (Min.) = WS

S = Existing Posted Speed (MPH)

NOTE

1. A lane closure analysis will be required to determine the times of day that this crossover can be in operation.

TEMPORARY CROSSOVER FOR MEDIAN WIDTHS FROM 50' TO < 75'

10/30/2018 9:01:54 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	TEMPORARY CROSSOVER	INDEX	SHEET
11/01/17					102-631	2 of 2

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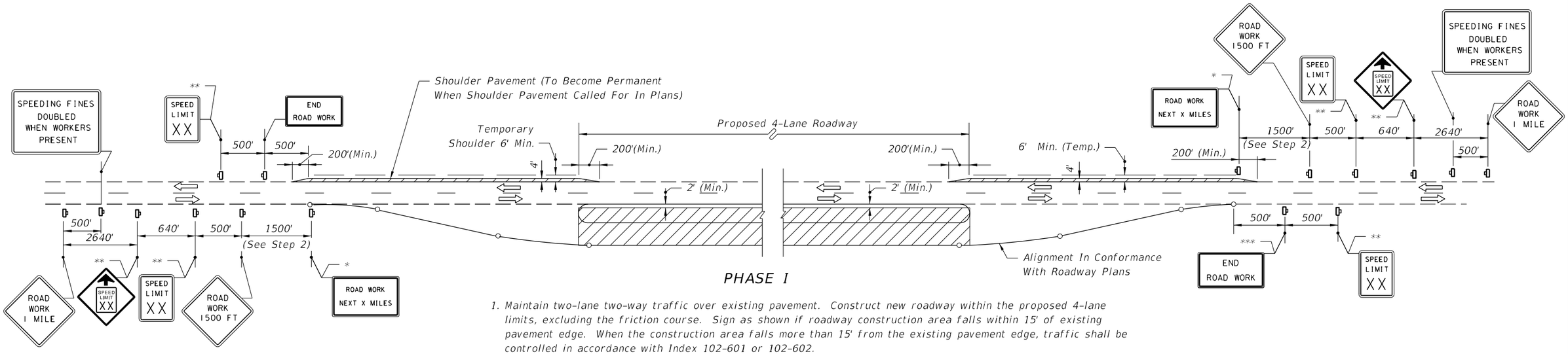
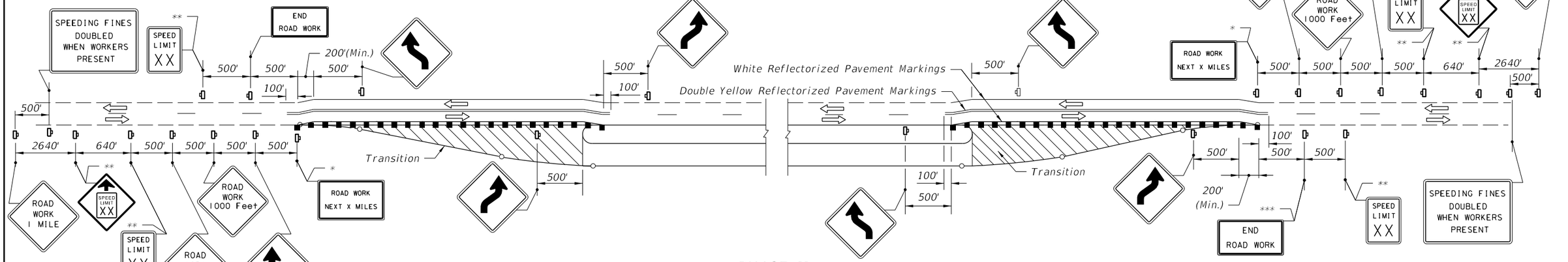


PHASE I

1. Maintain two-lane two-way traffic over existing pavement. Construct new roadway within the proposed 4-lane limits, excluding the friction course. Sign as shown if roadway construction area falls within 15' of existing pavement edge. When the construction area falls more than 15' from the existing pavement edge, traffic shall be controlled in accordance with Index 102-601 or 102-602.

2. Construct shoulder pavement to provide two-lane two-way traffic over shoulder and existing pavement during Phase II roadway construction. For lane width requirements see Index 102-600. Signing as shown, with the near 1500' zone modified in accordance with Index 102-603, to be in place prior to shoulder pavement construction.



PHASE II

1. Remove existing pavement marking in areas of diversion and remark as shown, install warning devices and resign as shown. Traffic to be controlled in accordance with Index 102-607. For lane width requirements see Index 102-600.

2. Route through traffic to temporary and existing pavement.

3. Construct transitions, excluding friction course.

Note: See Sheet 2 for General Notes.

SYMBOLS

- ■ Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification + Direction of Traffic

LEGEND

- Phase I Construction
- Phase II Construction
- Phase III Construction

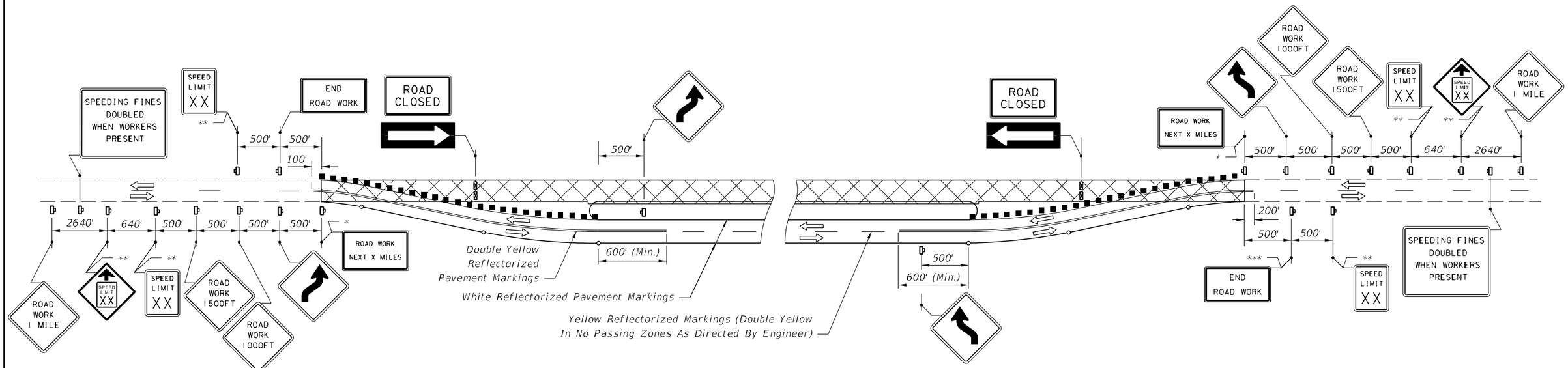
* Required For Projects > 2 Miles

** Required Only When Construction Zone Speed Reduced Below Existing Posted Speed Prior To Construction

*** When Other Construction Or Maintenance Operations Occur Within 1 Mile, Sign(s) To Be Omitted And Signing To Be Coordinated In Accordance With Index 102-600.

9/18/2018 10:46:52 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	CONVERTING TWO LANES TO FOUR LANES DIVIDED, RURAL	INDEX 102-640	SHEET 1 of 2



PHASE III

1. Remove temporary marking from the existing pavement and temporary shoulder pavement. Mark pavement, install warning devices and resign as shown. Traffic to be controlled in accordance with Index 102-607. For lane width requirements see Index 102-600.

2. Route through traffic to newly constructed roadway.

3. Resurface or reconstruct existing pavement including required shoulder pavement and friction course.

PHASE IV

1. Reroute through traffic as shown in Phase II. Signing to be as shown in Phase II.

2. Construct friction course over pavement constructed in Phases I and II.

GENERAL NOTES

1. Existing signs and pavement markings that conflict with construction signing and marking shall be obliterated or removed.

2. Lane widths for maintenance of two-way traffic should desirably be equal to lane widths of the existing facility, but lanes shall be not less than 10' in width. When one-lane one-way operations are necessary, a minimum width of 12' shall be maintained and traffic controlled in accordance with Indexes 102-603 and 102-607. Minimum width for the temporary shoulders is 6'.

3. Within the lateral transitions, the maximum spacing between Type I or Type II barricades or vertical panels or drums shall be based on the speed limit as follows: 15' up to 25 MPH; 30'-40 MPH; 50' for 45 MPH or greater.

   The maximum spacing between warning devices used for delineation between the travel way and construction area is 50' for Type I or Type II barricades or vertical panels or drums.

4. Warning devices shall be in conformance with 'Drop-offs In Work Zones', see Index 102-600.

5. For speed sign applications, see 'Regulatory Speed In Work Zones' Index 102-600.

6. For reflectorized raised pavement marker applications, see 'Pavement Markers' Index 102-600 and Index 706-001.

7. Additional barricades, signing, or other traffic controls shall be provided for limited work areas in accordance with other applicable TCZ Indexes.

8. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.

9. Provisions approved by the Engineer shall be made for the removal of storm water from the roadway(s) during construction.

10. For general TCZ requirements and additional information, refer to Index 102-600.

SYMBOLS

- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Lane Identification + Direction of Traffic

* Required For Projects > 2 Miles

** Required Only When Construction Zone Speed Reduced Below Existing Posted Speed Prior To Construction

*** When Other Construction Or Maintenance Operations Occur Within 1 Mile, Sign(s) To Be Omitted And Signing To Be Coordinated In Accordance With Index 102-600.

LEGEND

- Phase I Construction
- Phase II Construction
- Phase III Construction

9/18/2018 10:46:53 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	CONVERTING TWO LANES TO FOUR LANES DIVIDED, RURAL	INDEX	SHEET
11/01/17						102-640	2 of 2

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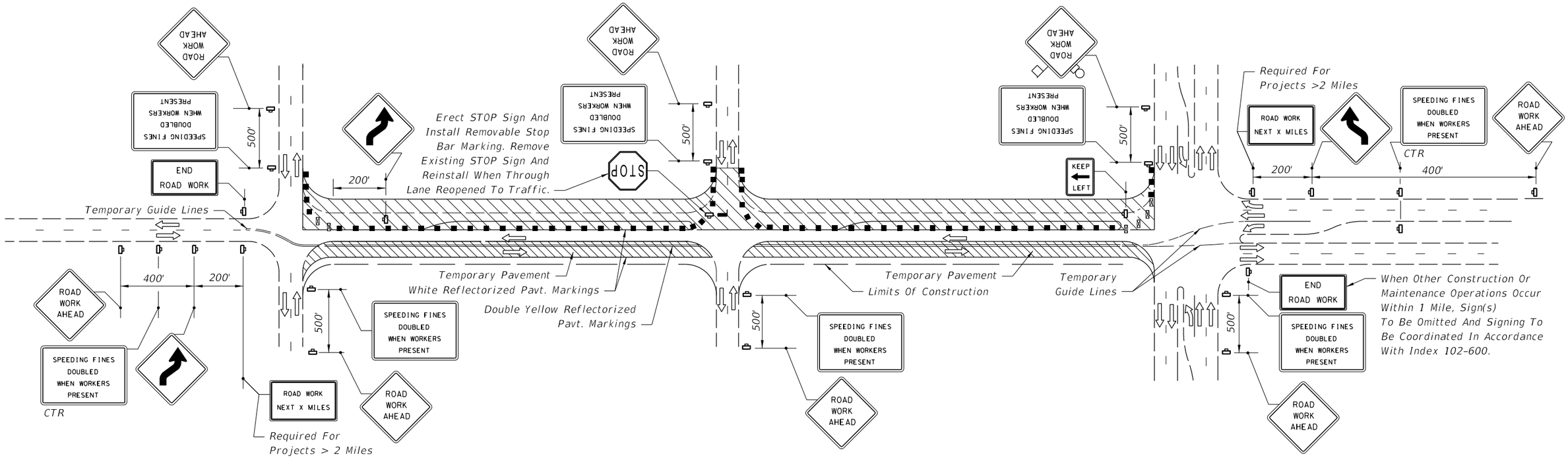


PHASE I

1. Maintain two-lane two-way traffic along existing facility. Install construction signing.

2. Remark existing pavement to facilitate temporary pavement construction. For lane width requirements see Index 102-600.

3. Construct temporary pavement of sufficient width to accommodate two-lane two-way traffic on the temporary pavement and a portion of the existing pavement during Phase I roadway construction. When two-lane two-way traffic can not be maintained during temporary pavement construction one-lane operations shall be maintained in accordance with Index 102-605. Channelizing devices shall be in conformance with 'Drop-Offs in Work Zones' of Index 102-600.

4. Mark the pavement in accordance with the Phase I diagram. Reroute through traffic to the temporary pavement and a portion of the existing pavement. For lane width requirements see Index 102-600.

5. Construct two lanes of the proposed roadway, excluding the friction course. Side street traffic to be maintained. Through and cross traffic to be controlled in accordance with Indexes 102-604, 102-605, and 102-615. Barricading shall be in conformance with 'Drop-Offs in Work Zones', Index 102-600. When work extends through an intersection, temporarily reroute the cross traffic to other cross streets. When rerouting is not possible, provide one-lane access (minimum) for two-lane two-way cross streets and one-lane access (minimum) each direction for four-lane two-way cross streets, in accordance with Indexes 102-604, 102-605, and 102-615.

SYMBOLS

- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Stop Bar
- Lane Identification + Direction of Traffic

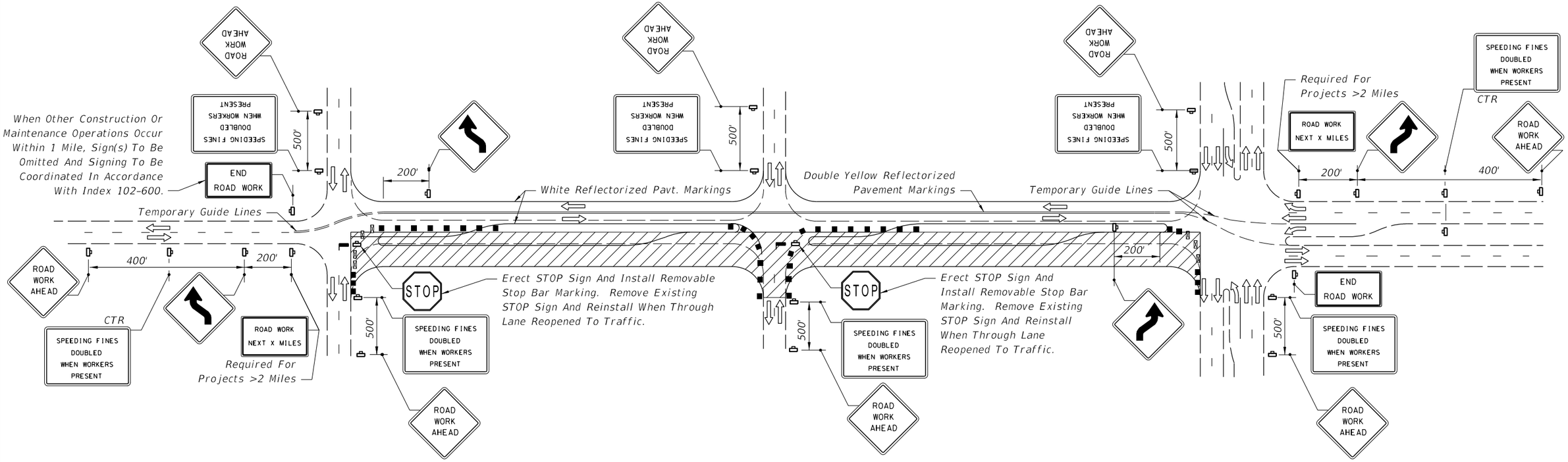
LEGEND

- Phase I Construction
- Phase II Construction
- Phase III Construction

See Sheet 3 for General Notes.

9/18/2018 10:48:06 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	CONVERTING TWO LANES TO FOUR LANES DIVIDED, URBAN	INDEX	SHEET
11/01/17						102-641	1 of 3



PHASE II

1. Sign and mark Phase I pavement in accordance with the Phase II diagram. For lane width requirements see Index 102-600.
2. Reroute through traffic to Phase I pavement.
3. Complete all Phase II construction, including the friction course. Side street traffic to be maintained. Through and cross traffic to be controlled in accordance with Indexes 102-604, 102-605, and 102-615. Channelizing devices shall be in conformance with 'Drop-Offs in Work Zones' of Index 102-600. When work extends through an intersection, temporarily reroute cross traffic to other cross streets. When rerouting is not possible, provide one-lane access (minimum) for two-lane two-way cross streets and one-lane access (minimum) each direction for four-lane two-way cross streets, in accordance with Indexes 102-604, 102-605, and 102-615.

SYMBOLS

- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Stop Bar
- Lane Identification + Direction of Traffic

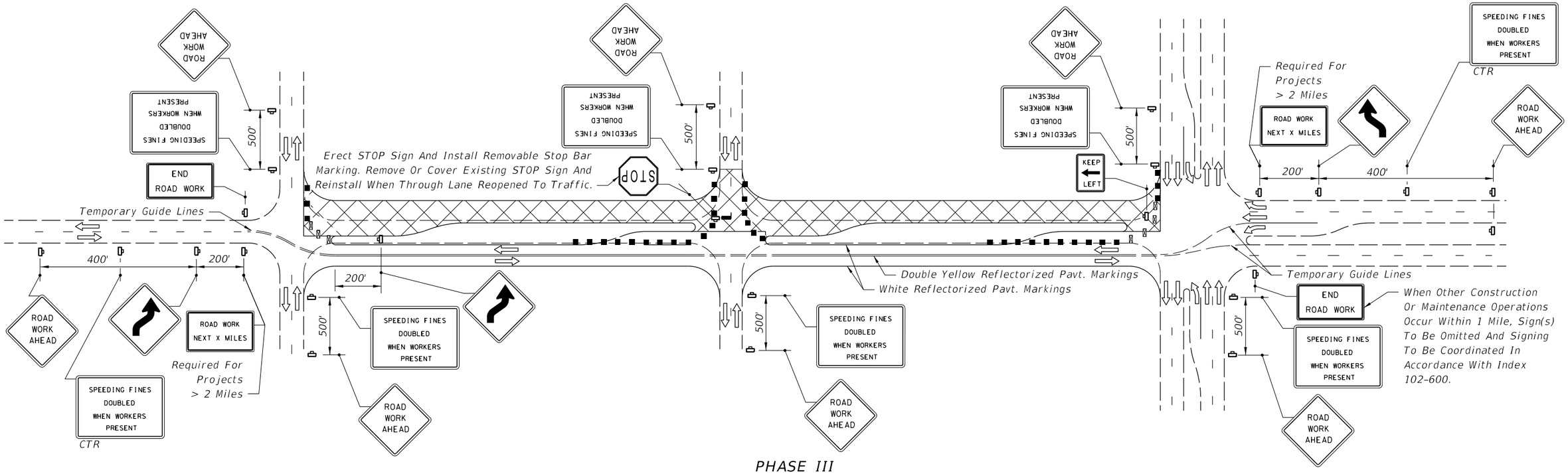
LEGEND

- Phase I Construction
- Phase II Construction
- Phase III Construction

See Sheet 3 for General Notes.

9/18/2018 10:48:06 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	CONVERTING TWO LANES TO FOUR LANES DIVIDED, URBAN	INDEX	SHEET
11/01/17					102-641	2 of 3



PHASE III

1. Sign and mark Phase II pavement in accordance with the Phase III diagram.
2. Reroute through traffic to Phase II pavement.
3. Construct friction course over Phase I pavement. Side street traffic to be maintained. Through and cross traffic to be controlled in accordance with Index 102-604, 102-605, or 102-615. When work extends through an intersection, temporarily reroute cross traffic to other cross streets. When rerouting is not possible, provide one-lane access (minimum) for two-lane two-way cross streets and one-lane across (minimum) each direction for four-lane two-way cross streets.

GENERAL NOTES

1. All signing, pavement marking, and barricades necessary for maintenance of traffic shall conform to Index 102-600.
2. Lane widths for maintenance of two-way traffic should desirably be equal to lane widths of the existing facility, but lanes shall not be less than 10' in width. When one-lane one-way operations are necessary, a minimum width of 12' should be maintained and traffic controlled in accordance with Index 102-604, 102-605, or 102-615.
3. At signalized intersections, signals shall be directed or relocated as required to the center of relocated lanes.
4. For reflectorized raised pavement marker application, see Indexes 102-600 and 706-001.
5. Additional barricades, signing, lighting or other traffic controls for limited work areas shall be provided in accordance with other applicable TCZ Indexes as conditions warrant in each phase.
6. Provisions approved by the Engineer shall be made for the removal of storm water from the roadway(s) during construction.
7. For general TCZ requirements and additional information, refer to Index 102-600.

SYMBOLS

- Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Stop Bar
- Lane Identification + Direction of Traffic

LEGEND

- Phase I Construction
- Phase II Construction
- Phase III Construction

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LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	CONVERTING TWO LANES TO FOUR LANES DIVIDED, URBAN	INDEX 102-641	SHEET 3 of 3

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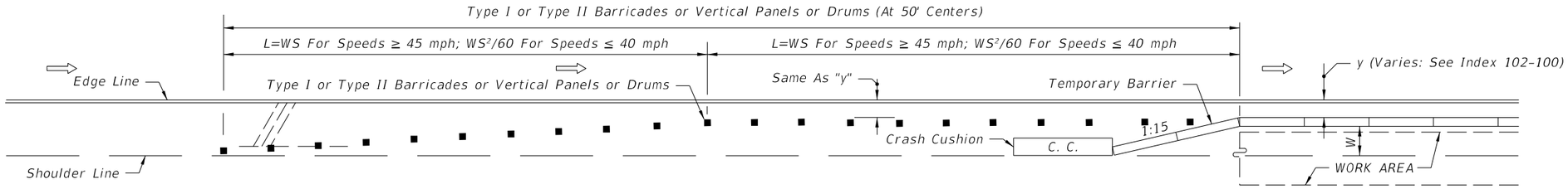
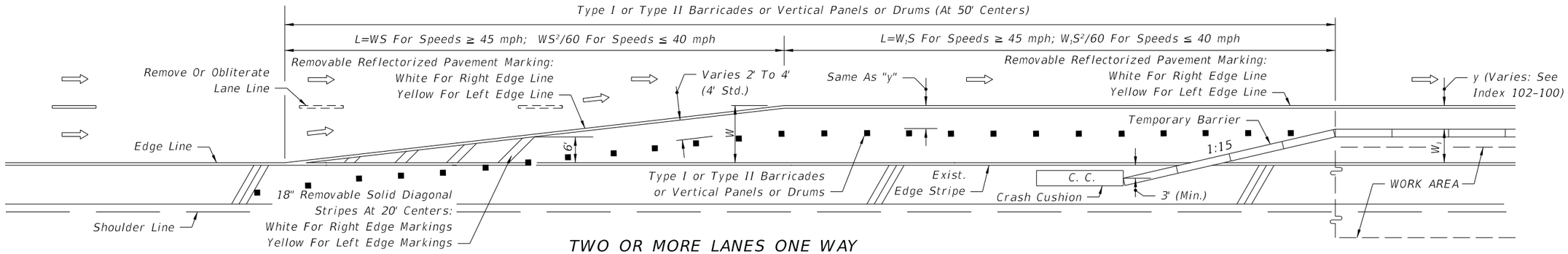
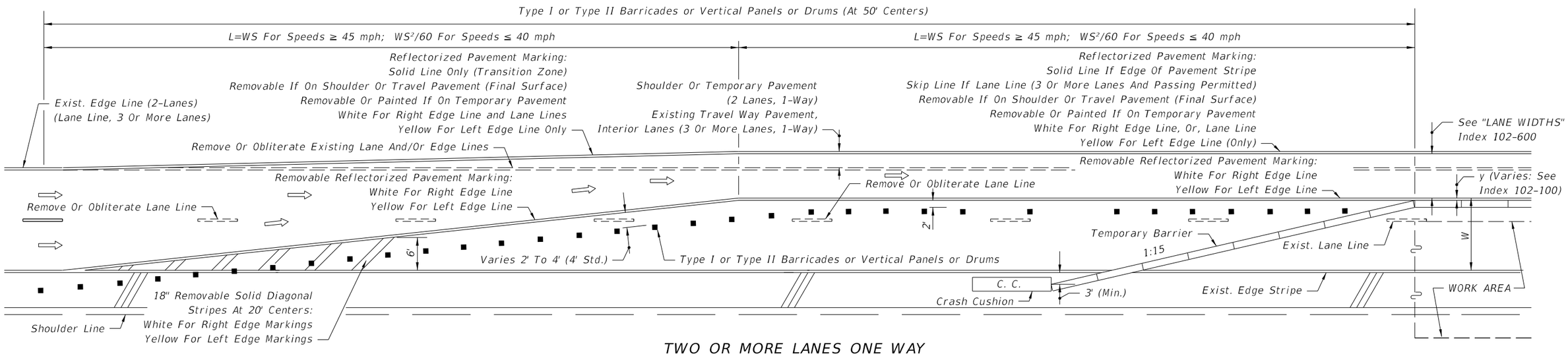


BARRIER AND TRANSITION LOCATED ON PAVED OR UNPAVED SHOULDERS
PLAN SHOWN FOR RIGHT LANE - INVERTED PLAN FOR LEFT LANE



TWO OR MORE LANES ONE WAY
LANE DROP • PLAN SHOWN FOR RIGHT LANE MERGE LEFT - INVERTED PLAN FOR LEFT LANE MERGE RIGHT



TWO OR MORE LANES ONE WAY
LANE DROP AND LANE SHIFTS - PLAN SHOWN FOR RIGHT LANE MERGE LEFT - INVERTED PLAN FOR LEFT LANE MERGE RIGHT

SYMBOLS

⇨ *Lane Identification + Direction of Traffic*

■ *Channelizing Device (See Index 102-600)*

GENERAL NOTES

1. *For signing information see the Plans, Specifications, MUTCD and other TCZ Indexes.*
2. *Where W=width of lateral transition in feet, S=posted speed limit.*

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	TRANSITIONS FOR TEMPORARY BARRIER ON FREEWAY FACILITIES	INDEX 102-642	SHEET 1 of 1

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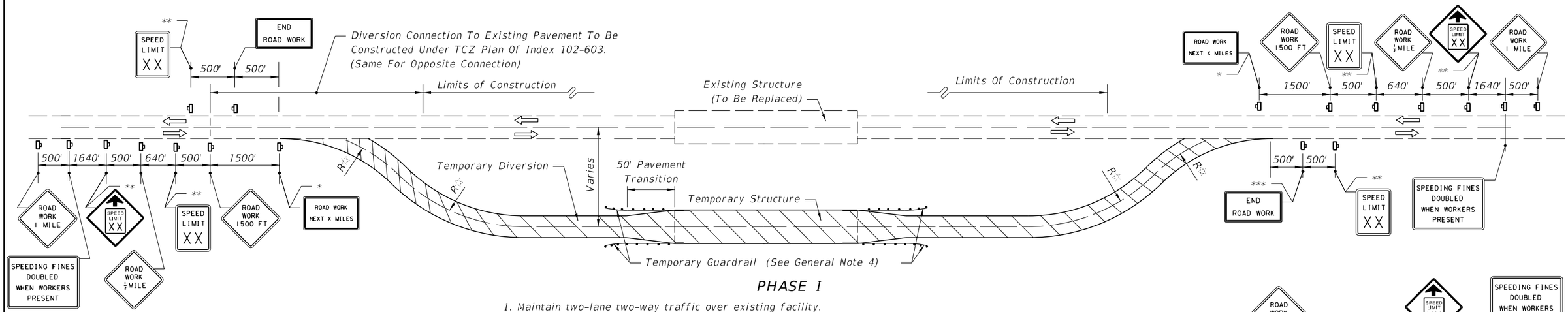
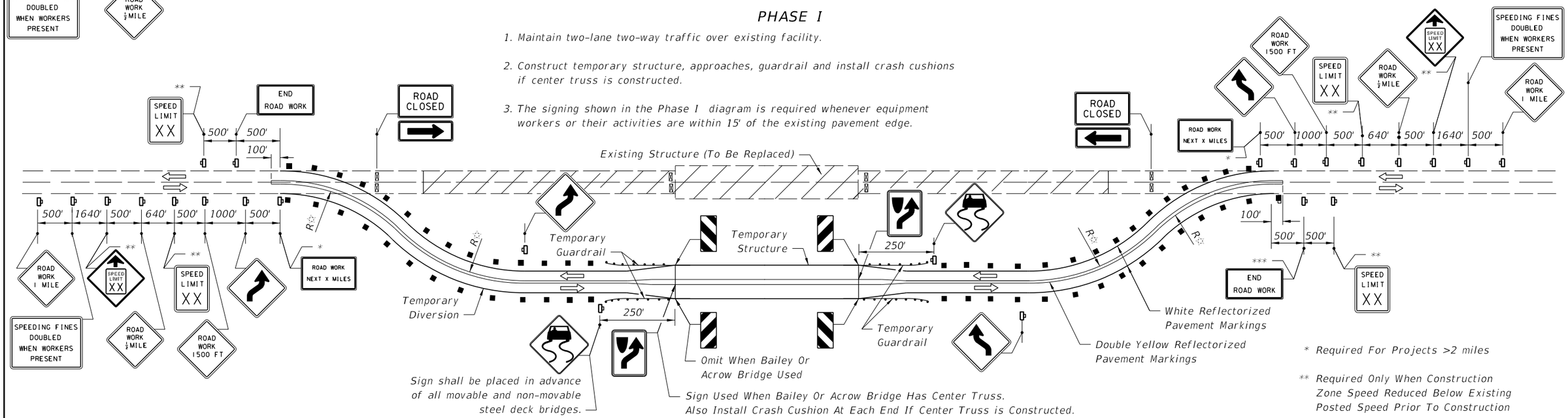


PHASE I

1. Maintain two-lane two-way traffic over existing facility.
2. Construct temporary structure, approaches, guardrail and install crash cushions if center truss is constructed.
3. The signing shown in the Phase I diagram is required whenever equipment workers or their activities are within 15' of the existing pavement edge.



☆ See SUPERELEVATION Index 102-600.

* Required For Projects >2 miles

** Required Only When Construction Zone Speed Reduced Below Existing Posted Speed Prior To Construction

*** When Other Construction Or Maintenance Operations Occur Within 1 Mile, Sign(s) To Be Omitted And Signing To Be Coordinated In Accordance With Index 102-600.

SYMBOLS

- ■ Channelizing Device (See Index 102-600)
- Type III Barricade
- Work Zone Sign
- Lane Identification + Direction of Traffic

PHASE II

1. Resign and mark as shown in Phase II plan.
2. Reroute traffic to diversion and maintain two-way traffic on diversion. Install Type III barricades.
3. Construct proposed structure and reconstruct or resurface existing approaches.

LEGEND

- Phase I
- Phase II

PHASE III and General Notes (See Sheet 2)

9/18/2018 10:49:03 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	TWO-LANE TWO-WAY, RURAL STRUCTURE REPLACEMENT	INDEX 102-650	SHEET 1 of 2

PHASE III

1. Reroute traffic to final alignment and maintain two-way traffic.

2. Remove all temporary construction items.

GENERAL NOTES

1. All signing, pavement marking, and barricades necessary for maintenance of traffic shall conform to Index 102-600.

2. For speed sign applications, see Index 120-600.

3. For lane width requirements see Index 102-600. When one-way one-lane operations are necessary, a minimum width of 12' shall be maintained and traffic controlled in accordance with Index 102-603, 102-606, or 102-607. Minimum width for the diversion shoulders is 6'.

4. Method of attaching temporary guardrail to the diversion structure to be approved by the Engineer. Cost of temporary guardrail systems, including end anchorage assemblies, transitions and attachment to temporary structures, are to be included in the contract unit price for Guardrail (Temporary) LF.

5. Provisions approved by the Engineer shall be made for the removal of storm water from the roadway(s) during construction.

6. Only temporary crash cushions approved by the Department shall be used unless specified devices called for in the plans.

7. Where the temporary structure is not required, the diversion may be constructed in accordance with Index 102-608, unless otherwise stipulated in the plans.

8. For reflective raised pavement marker application, see Indexes 102-600 and 706-001.

9. For general TCZ requirements and additional information, refer to Index 102-600.

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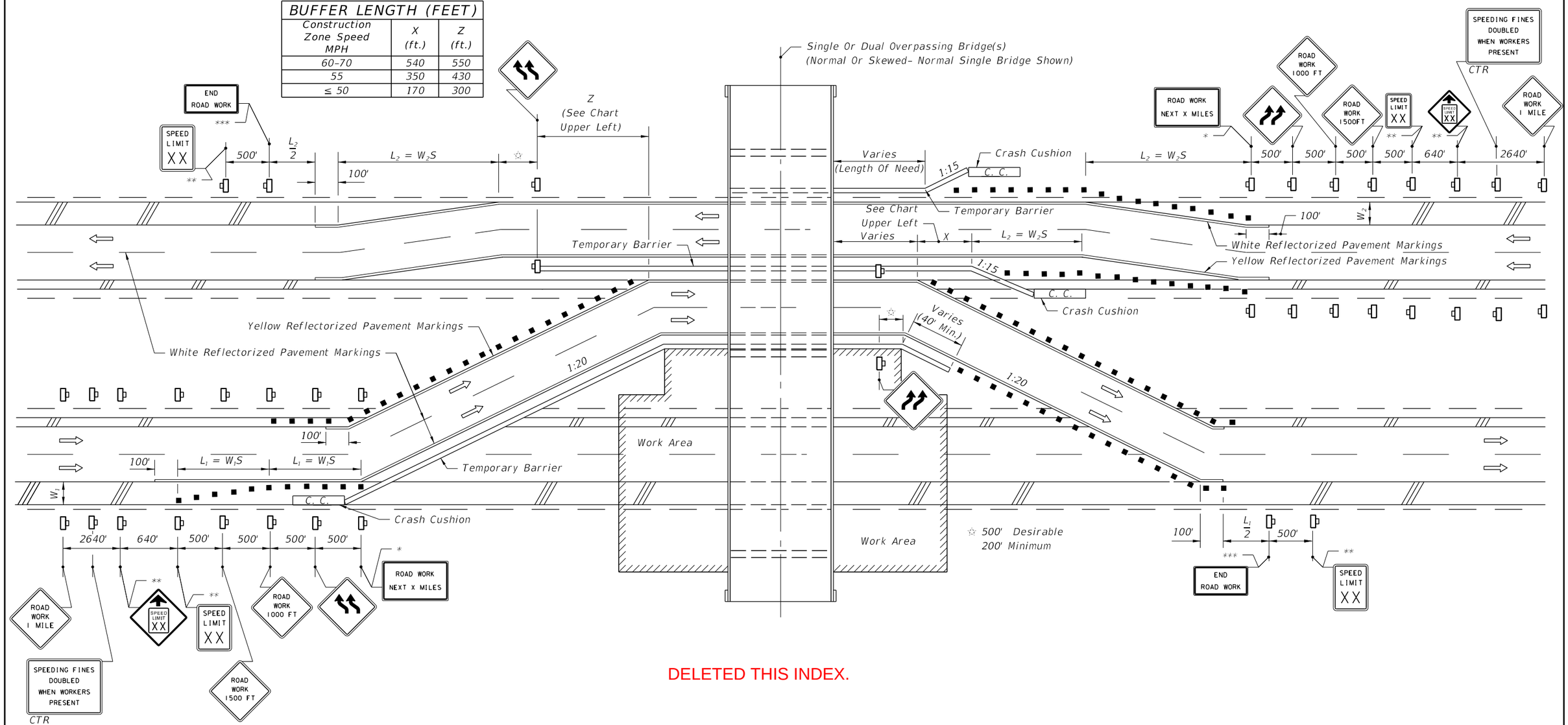
BUFFER LENGTH (FEET)		
Construction Zone Speed MPH	X (ft.)	Z (ft.)
60-70	540	550
55	350	430
≤ 50	170	300



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SYMBOLS

- Work Area
- ■ Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. S=Posted speed limit (mph).
2. Within the lateral transitions, the maximum spacing between Type I or Type II barricades or vertical panels or drums shall be based on the speed limit as follows: 15' up to 25 MPH; 30' for 30-40 MPH; 50' for 45 MPH or greater. Barricades, vertical panels, and drums shall not be intermixed in lateral transitions.
3. For speed sign applications, see 'Regulatory Speed in Work Zones' Index 102-600.
4. All existing pavement markings within the realignment which conflict with the revised traffic pattern are to be removed and new pavement markings used for marking edge lines and lane lines.
5. When side roads, cross roads or interchanges within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes
6. For general TCZ requirements and additional information, refer to Index 102-600.

* Required For Projects > 2 miles

** Required Only When Construction Zone Speed Reduced Below Existing Posted Speed Prior To Construction

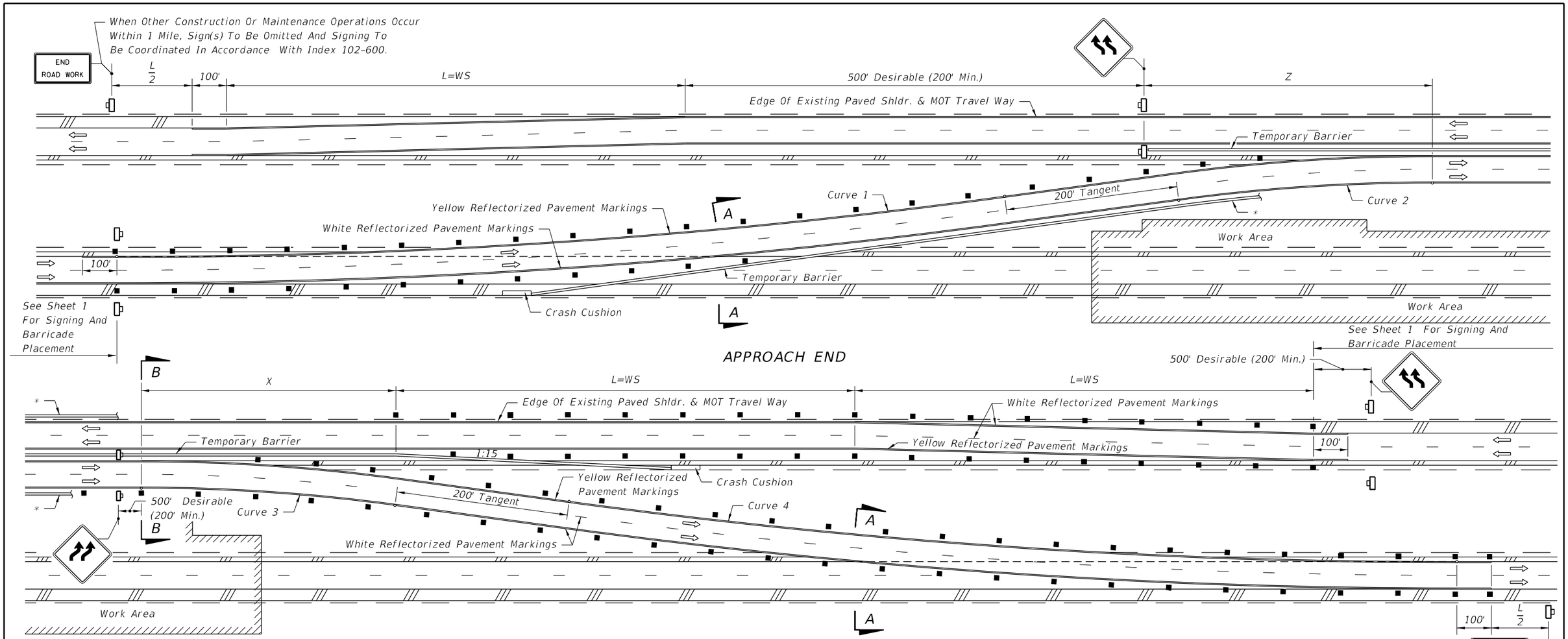
*** When Other Construction Or Maintenance Operations Occur Within 1 Mile, Sign(s) To Be Omitted And Signing To Be Coordinated In Accordance With Index 102-600.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES REQUIRE THE CLOSURE OF ONE ROADWAY AND THE OPPOSING ROADWAY IS CONVERTED TO TEMPORARY TWO-WAY TRAVEL BY WAY OF CROSSOVERS.

9/18/2018 10:51:20 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	MULTILANE DIVIDED, MAINTENANCE AND CONSTRUCTION	INDEX	SHEET
11/01/17					102-651	1 of 2

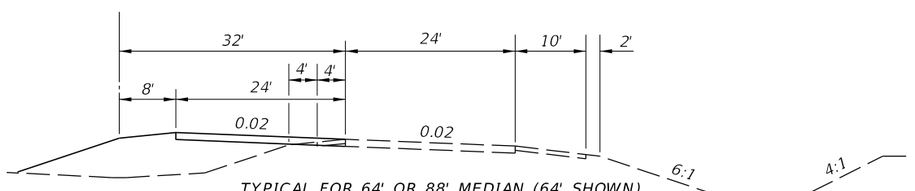


* Length of barrier needed for protection of work area and/or other hazards to be shown in the plans. For complimentary information on barrier and work area see Sheet 1. See Index 102-600 for clear zone requirements.

BUFFER LENGTH (ft)				
Construction Zone Speed MPH	64' Median		88' Median	
	X	Z	X	Z
70	607	588	582	545
65	581	562	552	514
60	562	543	531	492
55	337	369	330	350
50	201	286	200	276
45	115	164	115	163
40	104	149	104	148
35	91	134	91	132
30	78	118	78	115

MINIMUM RADII FOR NORMAL CROSS SLOPES		
Construction Zone Speed MPH	Minimum Radius (ft) R	
	Curves 1 & 4	Curves 2 & 3
70	22,918 (0° 15')	4,584 (1° 15')
65	22,918 (0° 15')	3,820 (1° 30')
60	22,918 (0° 15')	3,274 (1° 45')
55	11,459 (0° 30')	2,546 (2° 15')
50	11,459 (0° 30')	2,292 (2° 30')
45	1,080 (5° 18')	700 (8° 11')
40	830 (6° 54')	550 (10° 25')
35	620 (9° 14')	410 (13° 58')
30	450 (12° 44')	285 (20° 06')

NOTE: Diversions with speeds of 50 mph or greater are considered high speed facilities; curvature and superelevation criteria for open highway conditions apply.



TYPICAL FOR 64' OR 88' MEDIAN (64' SHOWN)

SECTION AA

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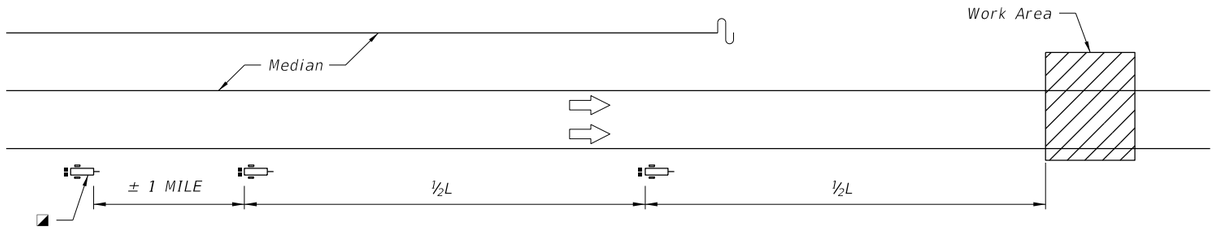
LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT	FY 2019-20 STANDARD PLANS	MULTILANE DIVIDED, MAINTENANCE AND CONSTRUCTION	INDEX 102-651 / SHEET 2 of 2

TRAFFIC PACING GUIDE

Traffic pacing is a traffic control technique to slow but not stop traffic to facilitate short duration work operations without an elaborate and difficult detour or diversion. Traffic Control Officers pace or slow the traffic to a speed that provides approximately 20–30 minutes to perform the work operation. The Department has frequently used this technique for setting bridge beams, overhead sign structures and replacing overhead sign panels.

CHANGEABLE MESSAGE SIGNS
(Typical Placement and Messages)



L = Length of Traffic Pacing Operation

Revised

Symbols

- ■ Channelizing Device (See Index 102-600)
- Marked Police Vehicle with Flashing Blue Lights
- PCMS, Portable Changeable Message Sign
- ◪ To be placed the day of pacing operation
- ⇨ Lane Identification and Direction of Traffic

CHANGEABLE MESSAGE SIGN MESSAGE
(MAINLINE AND RAMPS)

ONE WEEK PRIOR TO PACING OPERATION	EXPECT DELAYS ON	MMM DD-DD X AM – X AM
DURING DAY OF PACING OPERATION	ROAD WORK TONIGHT	EXPECT PERIODIC DELAYS
DURING PACING OPERATION	SLOW TRAFFIC AHEAD	BE PREPARED TO STOP

NOTICE

This Index represents the minimum requirements for traffic pacing operations on the State Highway System.

Develop a site specific traffic control plan for each pacing operation location.

TRAFFIC PACING GENERAL NOTES

1. Install ROAD CLOSED (W20-3) signs approximately 1000' prior to the work area. These signs shall remain covered until the pacing operation begins and covered when the pacing operation has ended.

5. 2. Prior to requesting that the traffic control officer supervisor initiate the pacing operation, the contractor shall ensure that the necessary equipment is properly positioned (off the roadway) for the construction activity requiring the traffic pacing operation.

6. 3. Truck mounted attenuator(s) with changeable message sign(s) are required to protect workers and/or equipment positioned in a travel lane(s) at the work area during the pacing operation from an errant vehicle. If no workers and/or equipment are positioned in a travel lane(s) at the work area, truck mounted attenuator(s) are not required.

7. 4. A traffic control officer supervisor shall be stationed at the work area continuously throughout the pacing operation to insure radio communications between the contractor and/or the project administrator, and all the police vehicles involved in the pacing operation.

9. 5. When more than one pacing operation is required in one work period the contractor shall allow sufficient time between pacing operations to permit traffic to return to normal speeds and flow. Additional time may be required between pacing operations to allow traffic to resume normal speeds and flow upstream of the work area as determined by the project administrator or traffic control officer supervisor.

10. 6. For work durations of less than five minutes, coordinate with traffic control officer to provide resources necessary for pacing traffic. Portable changeable message signs, truck-mounted attenuators, ROAD CLOSED signs, and site specific traffic control plans are not required for such operations. Use traffic pacing distance values from the five minute column of the table on Sheet 3.

Added notes 1, 2, 3, 4 & 8.

TRAFFIC CONTROL PLANS OR TECHNICAL SPECIFICATION

1. The specific activities and locations, along with allowable times of day and days of the week, when pacing will be allowed should be clearly detailed in the traffic control plans or technical specification. If there are specific holiday or special event dates that, due to anticipated traffic congestion, pacing operations should not be allowed, these dates should also be spelled out in plans or specifications. When detailing the specific activities and locations of pacing activities, identify the minimum number of traffic control officers needed for each function and location of the pacing operation. If there are certain work activities that need to be completed prior to the contractor starting the work anticipated during the pacing operation, the activities should be clearly detailed in the plans or technical specification.

2. When developing a pacing plan, failsafe "stop points" should be identified for those work operations in which a construction problem could create a condition that could not be immediately cleared. A failsafe stop point is the last safe egress from the highway facility prior to traffic coming upon the work that is being completed during the operation. In the unlikely event that the work is not completed during the time estimated for the pacing, the plans or specification should direct the pacing to not proceed past the failsafe stop point until the highway is cleared. In the event of major construction problem that cannot be immediately cleared, traffic can then be diverted off the facility.

3. The traffic control plans or technical specification should require the contractor to submit a pacing plan in advance of the operation. The pacing plan should outline the contractors expected equipment and personnel, outline the operation, and include a contingency plan should any of the contractor's critical equipment break down. If the project includes a damage recovery clause, the traffic control plan or technical specification should be clear that the damage recovery applies to the pacing operation as well.

4. Changeable message signs shall be displayed one week prior to work using messages described in the traffic pacing plan. The number and location of changeable message signs shall be called out in the traffic control plans.

102-070

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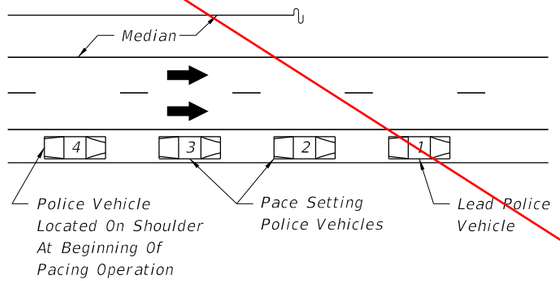
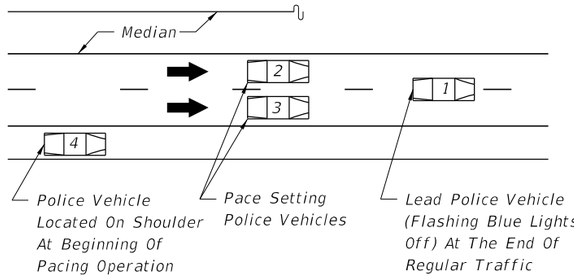
MAINLINE PACING DETAILS
(1 DIRECTION OF FOUR LANE ROADWAY EXAMPLE)



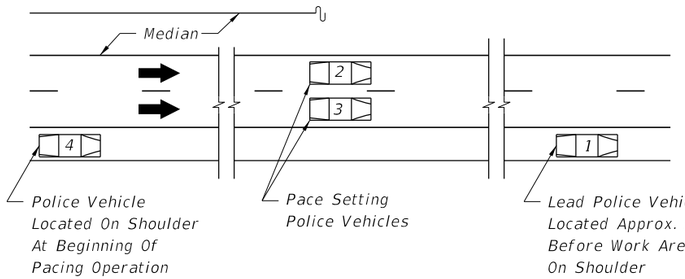
STAGE ONE

1. Four police vehicles located upstream of the work area at the beginning location of the traffic pacing operation with flashing blue lights off.



STAGE TWO

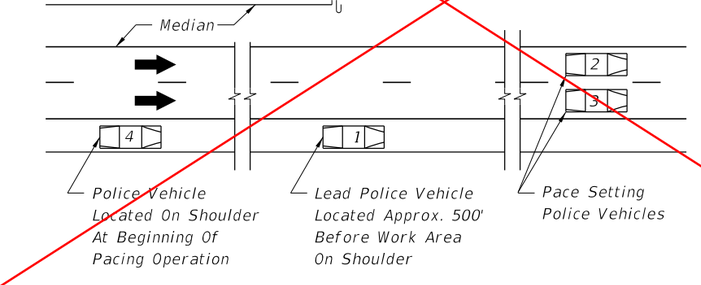
1. Once the police vehicles are in place and the traffic control officer supervisor at the work area notifies all officers to begin the traffic pacing operation, the last three police vehicles shall turn on their flashing blue lights. The first three police vehicles shall enter the travel lanes with the second and third police vehicles immediately forming a side by side "pacing operation" of all lanes behind the lead police vehicle (flashing blue lights off).



STAGE THREE

1. The two pace setting police vehicles shall begin to slow to the pacing speed (20 mph is preferred, 10 mph minimum), for the duration of the traffic pacing operation.

2. The lead police vehicle (flashing blue lights off) shall match the speed of the last vehicles ahead of the pacing vehicles and continue following traffic until a point approximately 500' in advance of the work area. The lead police vehicle shall then come to a complete stop on the right shoulder and turn on its flashing blue lights. If required, crash truck(s) with rear mounted impact attenuator(s) and changeable message sign(s) shall move into the travel lanes approximately 200 ft. upstream of the work area with the impact attenuators down and operating once traffic has cleared the work area.

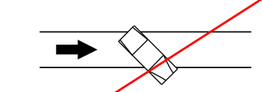


STAGE FOUR

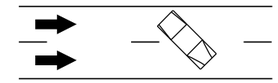
1. When the pace setting police vehicles are within approximately two miles of the work area they shall notify the onsite traffic control officer supervisor who will immediately inform the contractors on site supervisor of their location. Once the contractors on site supervisor has been notified of the pacing vehicles location, the contractor shall begin to clear the travel lanes of all equipment and debris in order to reopen all travel lanes.

2. In case of emergency the pace setting police vehicles shall come to a complete stop once they reach the lead police vehicle. If no emergency is encountered, the crash truck(s) shall be moved from the travel lanes and the two pace setting police vehicles shall clear the work area and immediately move to the right shoulder or an area designated by the traffic control officer supervisor and turn off the flashing blue lights. Once the two pace setting police vehicles pass the work area, the traffic control officer supervisor shall instruct the lead and last police vehicles to turn off their flashing blue lights.

RAMP PACING DETAILS



ONE LANE RAMP



TWO LANE RAMP

RAMP CLOSURE DETAIL

1. Once notified by the on site traffic control officer supervisor to begin the traffic pacing operation each police vehicle at the indicated ramp shall turn their flashing blue lights on and position the vehicle across the ramp lane(s) to close ramp access.

2. Once the pacing operation passes the closed on ramp the police vehicle on the ramp shall turn off the flashing blue lights and move from the ramp lane(s) to allow traffic to enter the mainline pacing operation.

GENERAL NOTES

1. Each Traffic Control Officer shall have a marked vehicle with flashing blue lights, for the pacing operation. The location and number of officers at each location will be as follows:

No. Of Traffic Control Officers With Vehicles	Function	Location
1 min.	Supervisor	Work Area
1 Lead Vehicle	Varies	Mobile operation
1 for each travel lane	Pacing Operation	Mobile operation beginning x miles upstream and terminating at the work area
1 Stationed at the Beginning of Pacing Operation	Advanced Warning to Motorist	Stationed at the Beginning of Pacing Operation
1 for each entrance ramp	Entrance Ramp Roadblocks	One at each of the entrance ramps upstream of the work area

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11/01/17						102-655	2 of 3

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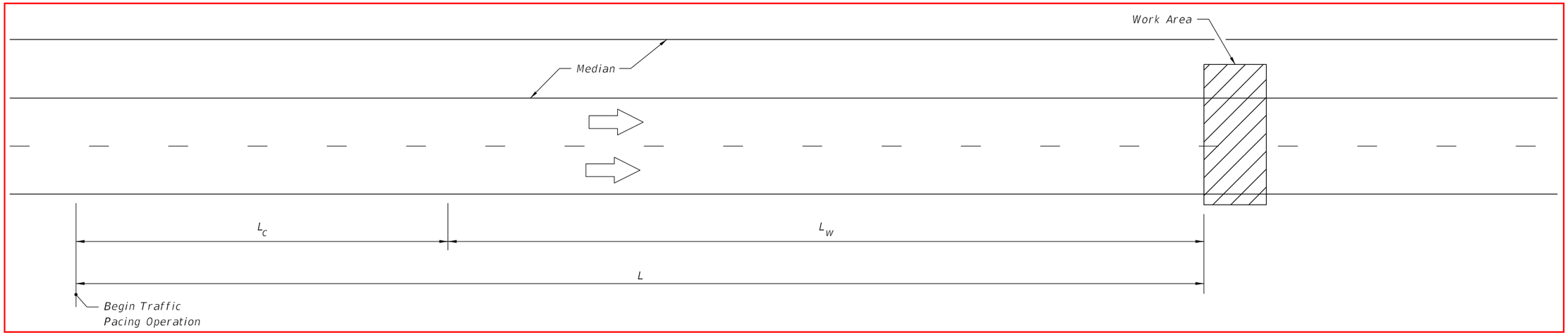
Combined with detail on Sheet 1.



DESIGN CONSIDERATIONS:

The design shall evaluate the actual distance required for the pacing operation based on site specific features such as: roadway geometrics, pacing speeds, regulatory speeds, interchange spacing, work duration, availability of traffic control officers, traffic volumes and maximum queue length.

The starting point of a traffic pacing operation must consider the following factors: the speed of the pacing vehicles, the location of entrance ramps, horizontal and vertical alignment of the facility.

In some instances, it may be necessary to close a lane at the work site to position a crane(s) and the materials to be lifted.

All material to be installed shall be on-site before the traffic pacing operation begins.

It may be necessary to install temporary barrier walls to protect pre-positioned and assembled materials in the right of way.

Note 1 on Table

The minimum speed allowed for a pacing operation is 10 mph with 20 mph the preferred speed.

Note 3 on Sheet 1

The maximum allowed work duration is ½ hour (30 min).

The maximum practical pacing operation length is 10 miles.

Revised, but similar.

S_r = Regulatory speed (mph)

S_p = Pacing speed (mph)

t_w = Work duration (min)

L = Total pacing distance in miles

$$L = \frac{t_w}{60} S_p \left(\frac{S_p}{S_r - S_p} + 1 \right)$$

$$L = L_c + L_w$$

L_c = distance paced vehicles must travel before the vehicles at regulatory speed have cleared the work zone

$$L_c = \left(\frac{\frac{t_w}{60} \times S_p^2}{S_r - S_p} \right)$$

L_w = distance paced vehicles travel while work is performed

$$L_w = \left(\frac{t_w}{60} \times S_p \right)$$

F_{HV} = Heavy Vehicle Factor

$$F_{HV} = 1 + \left(\frac{P_t}{100} \times 0.5 \right)$$

P_t = % Trucks

TRAFFIC PACING DISTANCES (L) miles

S_p=20; pcphpl ≤ 1,750

S_r	t_w (min)					
	5	10	15	20	25	30
70	2.3	4.7	7.0	9.3	*	*
65	2.4	4.8	7.2	9.6	*	*
60	2.5	5.0	7.5	10.0	*	*
55	2.6	5.2	7.9	*	*	*
50	2.8	5.6	8.3	*	*	*

* Calculation required, for additional guidance see FDOT Design Manual 242.

NOTES FOR TABLE:

t_w is the total time allowed for work activity in minutes. This time starts just after the last vehicle traveling at the pre-pacing regulatory speed clears the work area and ends just as the pacing operation reaches the work area. t_w must include the time required to clear the roadway of equipment, materials, and personnel.

Demand volume may not exceed 1,750 pcphpl (passenger cars per hour per lane) without a site specific design. Traffic counts can be obtained from the Office of Planning, or you may need to collect traffic counts. Hourly directional traffic volumes must be converted to pcphpl using the following:

$$pcphpl = \left(\frac{\text{Hourly Directional Volume}}{\text{\# Lanes (each direction)}} \right) \times \text{Heavy Vehicle Factor}$$

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11/01/18			FDOT FY 2019-20 STANDARD PLANS	TRAFFIC PACING	INDEX 102-655	SHEET 3 of 3

SYMBOLS

- Work Area
- Channelizing Device
- Work Zone Sign
- CR — Required Locations For Either Temporary Or Permanent Curb Ramps.
- Lane Identification + Direction of Traffic
- Pedestrian Longitudinal Channelizing Device (LCD) with Mounted Work Zone Sign or separate Work Zone Sign
- Pedestrian Longitudinal Channelizing Device (LCD)
- Temporary Sidewalk

Revised

GENERAL NOTES:

MOVED TO 102-6.2

1. When encroaching work requires a sidewalk closure for 60 minutes or greater, provide an alternate pedestrian route.

~~2. For spacing of vehicular Channelizing Devices, see applicable vehicular temporary traffic control Indexes.~~

New #1

3. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.

~~4. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.~~

5. Provide a 5' wide temporary walkway, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary walkways less than 5' in width at intervals not to exceed 200'.

Combined with #6 and moved to Sheet 2

Combined with #5 and moved to Sheet 2

6. Provide a cross-slope with a maximum value of 0.02 for all temporary walkways.

102-6.2

7. Maintain temporary walkway surfaces and ramps that are stable, firm, slip-resistant, and free of any obstructions or hazards such as holes, debris, mud, construction equipment, and stored material.

~~8. Remove temporary walkways immediately after reopening of the sidewalk, unless otherwise noted in the plans.~~

9. Meet the requirements of Index 522-002 for temporary curb ramps.

Revised and moved to Sheet 2

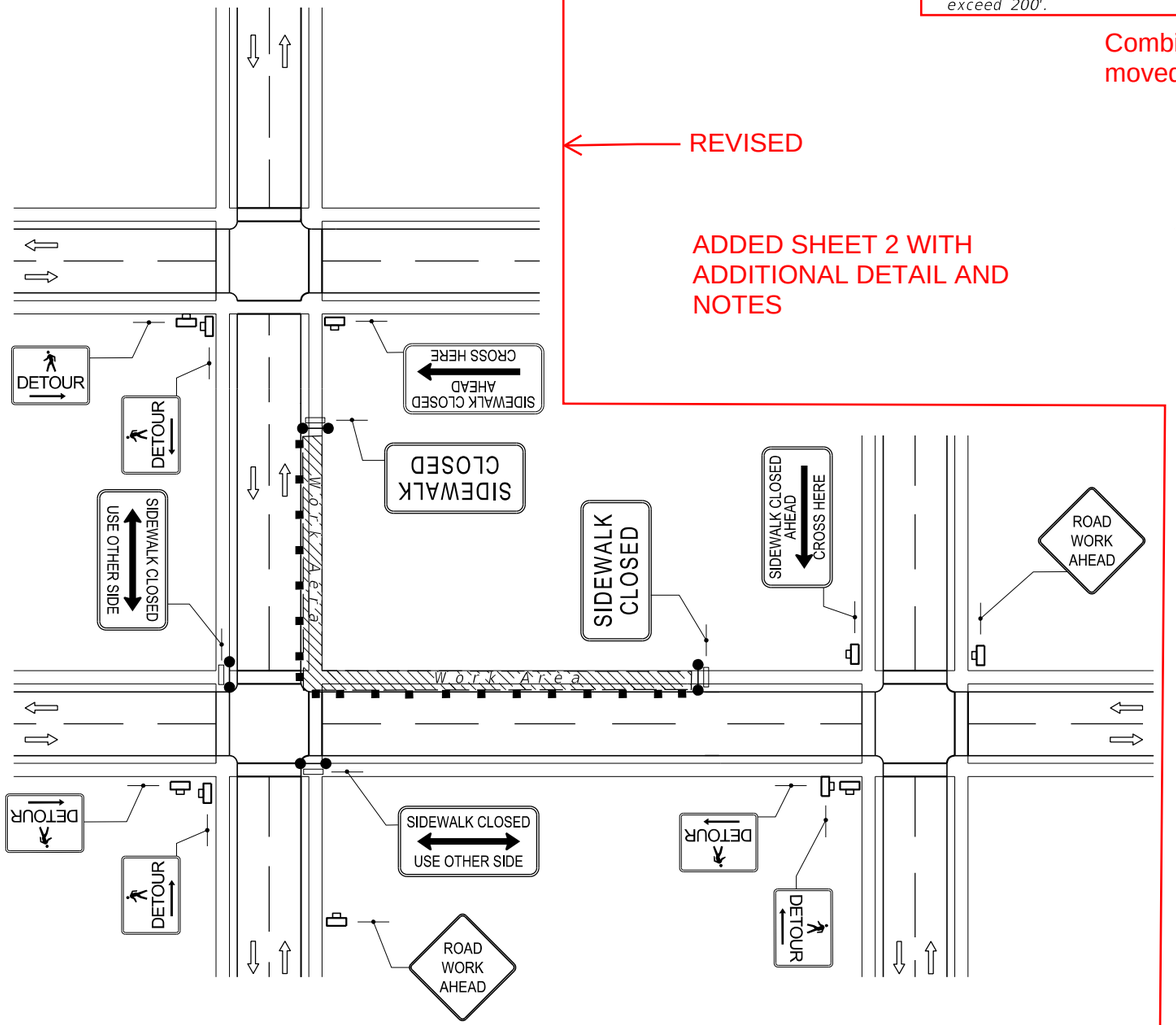
10. Place pedestrian longitudinal channelizing device(s) across the full width of the closed sidewalk. For temporary walkways, similar to the Sidewalk Diversion, place LCDs to delineate both sides of the temporary walkway.

Revised, new #2

~~11. For sidewalk diversions, ensure that there is sufficient R/W for placement of temporary sidewalk and pedestrian longitudinal channelizing devices.~~

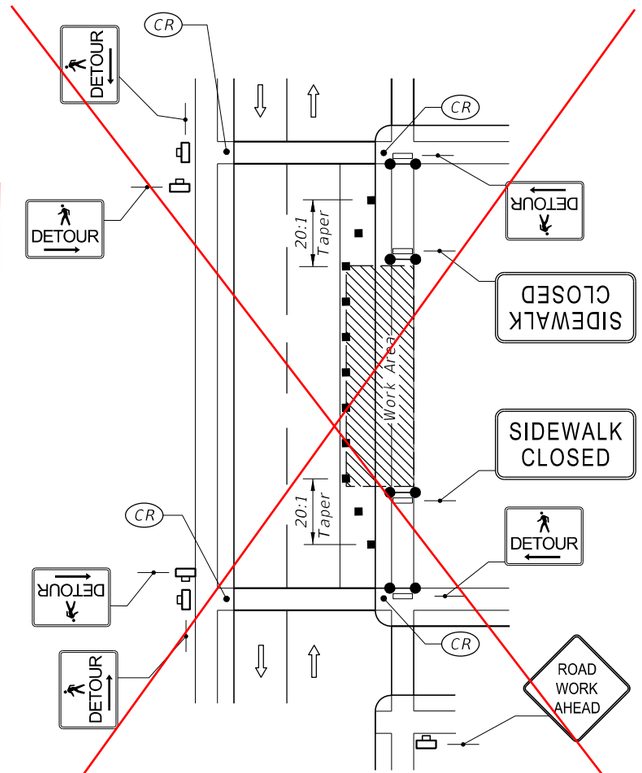
Added new #3

REVISED



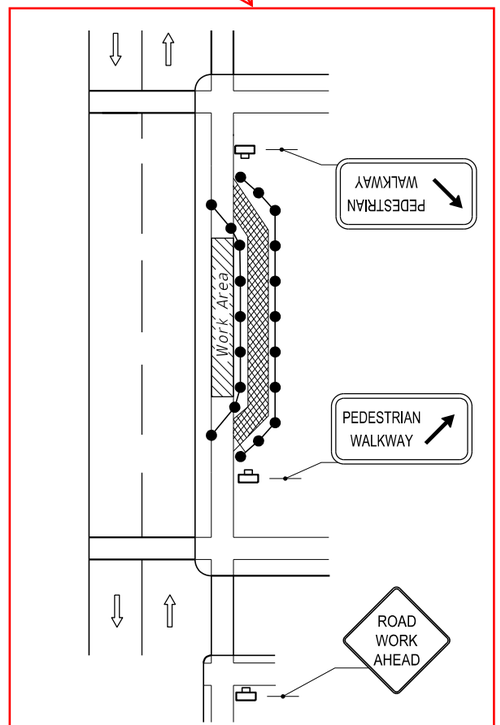
~~CROSSWALK CLOSURE AND~~ PEDESTRIAN DETOUR

ADDED SHEET 2 WITH ADDITIONAL DETAIL AND NOTES



SIDEWALK DETOUR

REVISED AND MOVED TO SHEET 2



TEMPORARY PEDESTRIAN WAY

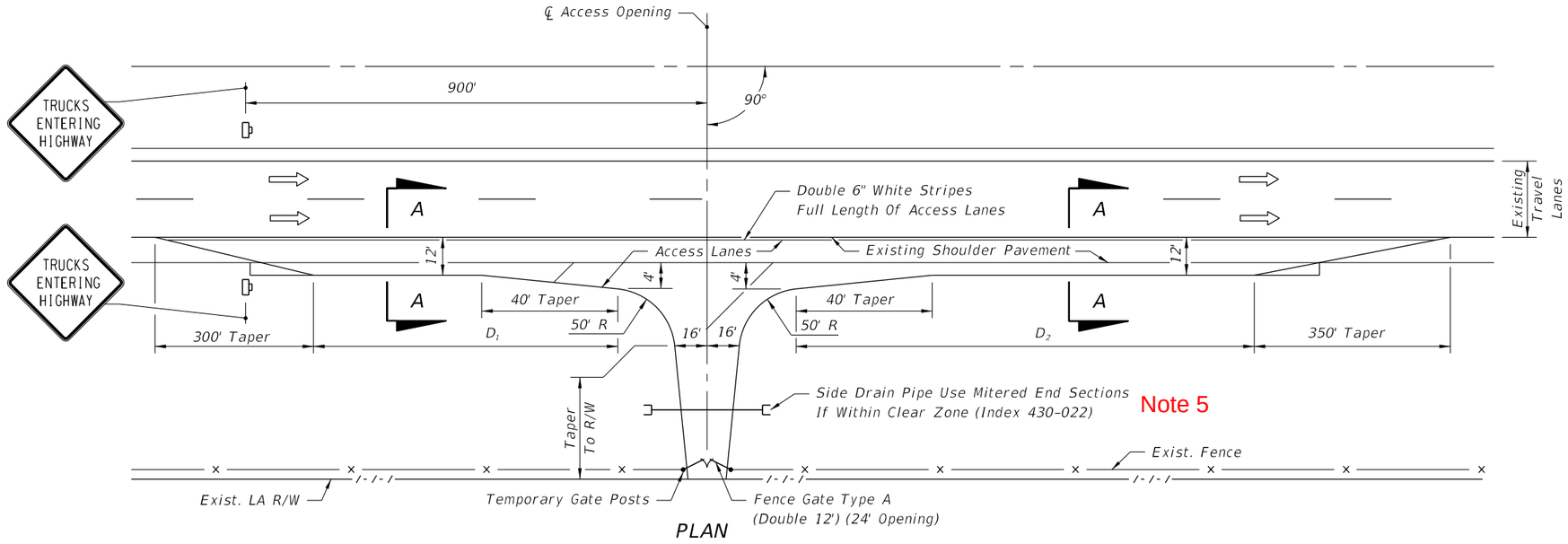
~~SIDEWALK DIVERSION~~

WORK ON THE SIDEWALK

102-075

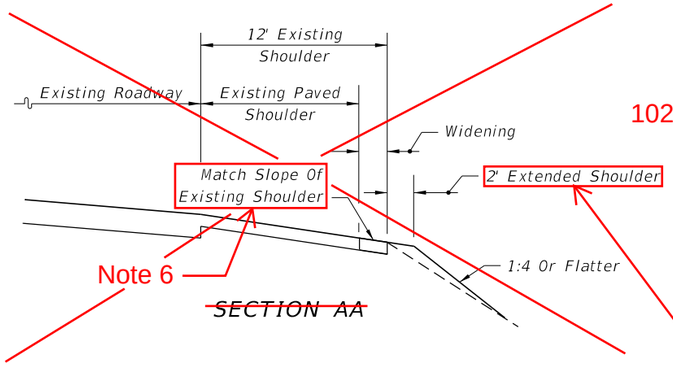
10/24/2018 7:36:36 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FDOT FY 2019-20 STANDARD PLANS	PEDESTRIAN CONTROL FOR CLOSURE OF SIDEWALKS	INDEX 102-660	SHEET 1 of ~~1~~ 2



PLAN

LENGTH OF ACCESS LANES (Ft.)		
Grade	D_1	D_2
2% or less	590	1540
3 to 4% Upgrade	530	2310
3 to 4% Downgrade	710	925



GENERAL NOTES

Spec 102-5.14

1. Access openings across limited access right of way and use of this Index are prohibited unless specifically permitted in the Contract Plans or Special Provisions. When permitted in the Contract Plans or Special Provisions and prior to construction of any opening, the Contractor must submit, in writing, a request identifying specific locations for approval by the Engineer.

2. No more than two (2) access openings will be allowed on each project.

Note 3

3. Access openings shall be located only in areas having adequate sight distance and shall not be located within 1.5 miles of interchanges nor within 2000 ft. of acceleration-deceleration lanes at rest areas, other access openings or other highway service areas.

4. Access openings shall not be constructed directly opposite temporary median crossovers nor within 2000 ft. of temporary median crossovers.

Spec 102-5.14

5. Access openings shall be within the project limits and shall not be used for transporting materials to or from any other project. The acceleration-deceleration surfaces shall be paved. RAP material is acceptable for driveway surfacing.

6. ~~Any Motorist Aid Call Boxes affected by the temporary access openings shall be relocated outside the limits of access lanes and remain in use during construction. Upon removal of access lanes, call boxes shall be returned to their previous location. Temporary relocation and restoration of call boxes shall be at the contractor's expense.~~

Spec 102-5.14

7. Access openings in the limited access fence shall have gates which are to be locked during nonwork hours or periods when the access is not in active use.

8. ~~The contractor shall take all precautions necessary to insure against entrance by livestock or unauthorized persons or vehicles.~~

9. The contractor shall not vary from the plan detail without approval of the Engineer.

10. Gates shall be removed and access opening locations shall be restored to preconstruction condition immediately upon completion of activities utilizing the materials being transported through the openings whether or not the project is completed.

11. Failure to comply with any provision of the access opening plan shall be cause for terminating use of all openings. Upon notification by the Engineer, the contractor shall cease hauling and begin restoration of affected areas. Under this condition expense of removal, restoration and of additional hauling distances shall be borne by the contractor.

Note 4

12. No guardrail or barrier wall will be removed for access openings.

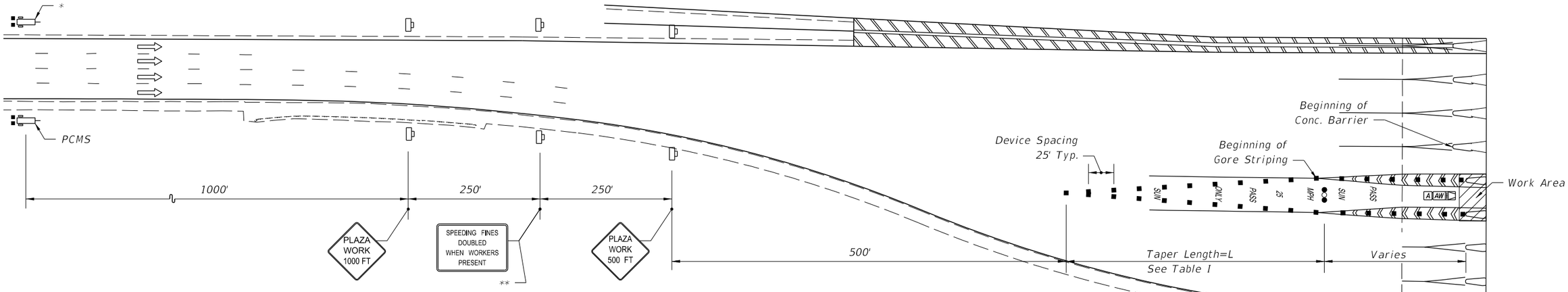
13. ~~Construction and removal of the access and restoring the area to preconstruction condition shall be included in the cost of Maintenance Of Traffic, LS.~~

SYMBOLS

Work Zone Sign

9/19/2018 1:53:47 PM

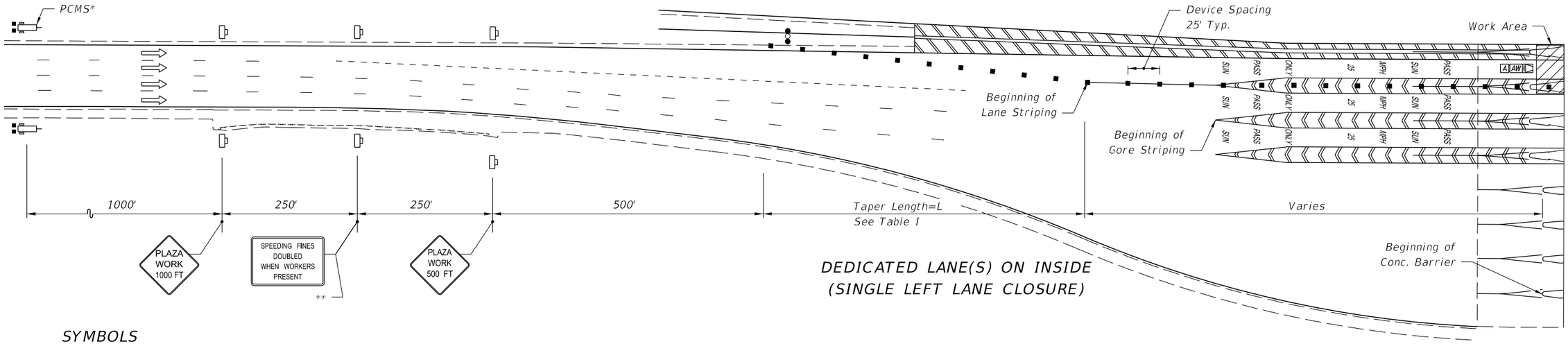
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	LIMITED ACCESS TEMPORARY OPENING	INDEX	SHEET
11/01/17						102-665	1 of 1



* *If There is No Room in the Median for the PCMS, Then Locate it on the Outside of the Roadway only.*

** *Install temporary Speeding Fines Doubled sign only if there is not an existing permanent "Speeding Fines Doubled Through Toll Plaza" sign or an existing "Speeding Fines Doubled When Workers Present" sign in place.*

DEDICATED LANE(S) IN CENTER



DEDICATED LANE(S) ON INSIDE (SINGLE LEFT LANE CLOSURE)

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic
- Advance Warning Vehicle Equipped with Advance Warning Arrow Board and Truck/Trailer Mounted Attenuator
- Portable Changeable (Variable) Message Sign

PCMS DISPLAY A

MESSAGE 1: SUNPASS LANE(S) CLOSED — MESSAGE 2: USE CASH LANES

PCMS DISPLAY B

MESSAGE 1: SUNPASS ONLY LANE(S) — MESSAGE 2: CLOSED AT PLAZA

PCMS DISPLAY C

MESSAGE 1: SUNPASS ONLY LANE(S) — MESSAGE 2: KEEP LEFT/RIGHT

Table I - Taper Length (L)

Dedicated Lane Location	Number of Dedicated Lanes	Number of Dedicated Lanes Closed	Taper Length (Feet)	PCMS Display
Center	1	1	200	A
	2	1	200	B
		2	350	A
	3	1	350	B
		2	350	B
		3	350	A
Inside***	1	1	350	A
	2	1	350	C
	3	1	350	C

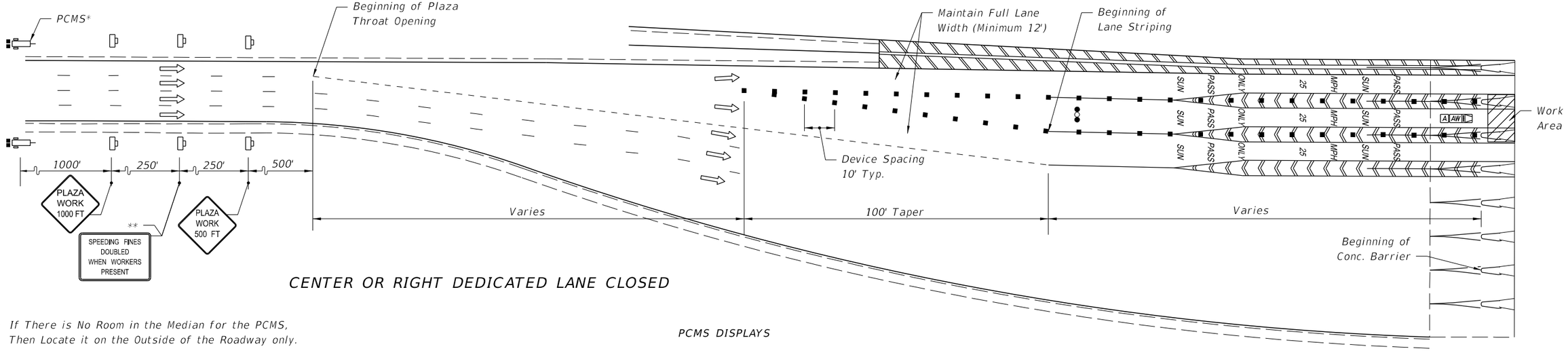
*** *See Index 102-667 Sheet 2 for Right or Center Inside Dedicated Lane Closed, or Two or More Inside Dedicated Lanes Closed Configurations.*

GENERAL NOTES

1. *This Plan is to be used at Mainline Plazas Only.*
2. *This Plan is for Lane Closures that exceed three hours.*
3. *Plaza canopies which have existing DMS signs on the canopies shall display the message "LANE CLOSED" for the duration of this closure.*
4. *A truck/trailer mounted attenuator is required.*
5. *Lane use control lights, signs, or signals over toll lanes shall be switched to the appropriate symbol, message, or correct color prior to the start of any lane closure. They should also be switched at project completion.*
6. *At least 48 hours prior to any closure, other than emergencies, the plaza manager shall be notified for security and staffing.*

DELETED INDEX.

DEDICATED LANES



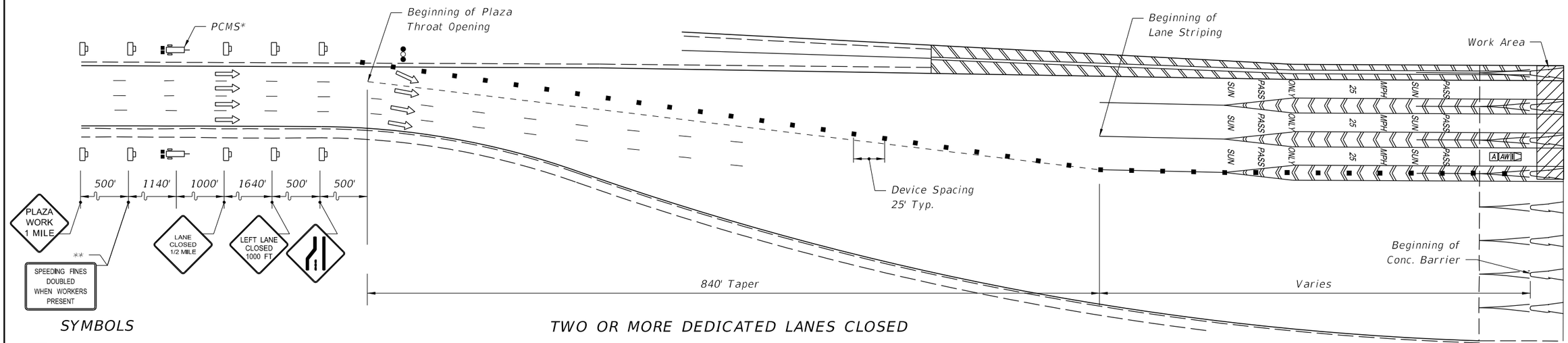
CENTER OR RIGHT DEDICATED LANE CLOSED

* If There is No Room in the Median for the PCMS, Then Locate it on the Outside of the Roadway only.

** Install temporary Speeding Fines Doubled sign only if there is not an existing permanent "Speeding Fines Doubled Through Toll Plaza" sign or an existing "Speeding Fines Doubled When Workers Present" sign in place.

PCMS DISPLAYS

	MESSAGE 1:	MESSAGE 2:
	CENTER SUNPASS LANE	CLOSED AT PLAZA
	SUNPASS ONLY LANE(S)	KEEP LEFT



TWO OR MORE DEDICATED LANES CLOSED

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic
- Advance Warning Vehicle Equipped with Advance Warning Arrow Board and Truck/Trailer Mounted Attenuator
- Portable Changeable (Variable) Message Sign

PCMS DISPLAY

	MESSAGE 1:	MESSAGE 2:
	SUNPASS LANES CLOSED	USE CASH LANES

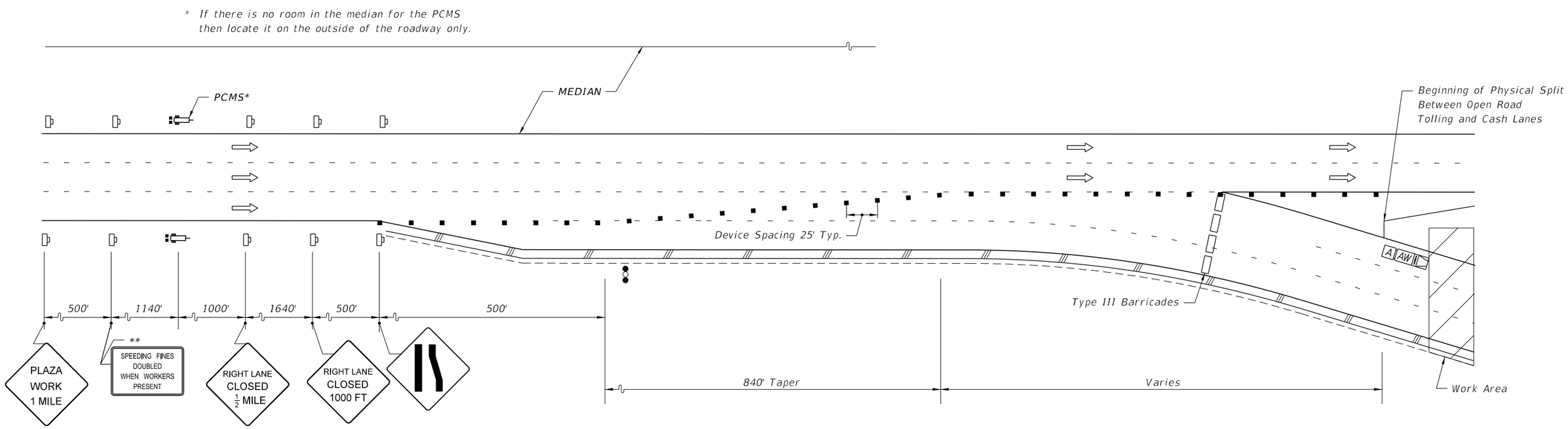
GENERAL NOTES

1. This Plan is to be used at Mainline Plazas Only.
2. This Plan is for Lane Closures that exceed three hours.
3. Plaza canopies which have existing DMS signs on the canopies shall display the message "LANE CLOSED" for the duration of this closure.
4. A truck/trailer mounted attenuator is required.
5. See Sheet 1 for Two or More Inside Dedicated Lanes Single Left Lane Closed Configuration.
6. Lane use control lights, signs, or signals over toll lanes shall be switched to the appropriate symbol, message, or correct color prior to the start of any lane closure. They should also be switched at project completion.
7. At least 48 hours prior to any closure, other than emergencies, the plaza manager shall be notified for security and staffing.

INSIDE DEDICATED LANES

9/18/2018 10:55:34 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/17			FY 2019-20 STANDARD PLANS	TOLL PLAZA TRAFFIC CONTROL STANDARDS	INDEX 102-667	SHEET 2 of 6



ALL LANES CLOSED***

** Install temporary Speeding Fines Doubled sign only if there is not an existing permanent "Speeding Fines Doubled Through Toll Plaza" sign or an existing "Speeding Fines Doubled When Workers Present" sign in place.

*** Inverted for Inside Open Road Tolling Lanes Configuration

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic
- Advance Warning Vehicle Equipped with Advance Warning Arrow Board and Truck/Trailer Mounted Attenuator
- Portable Changeable (Variable) Message Sign
- Type III Barricades and "RAMP CLOSED" sign

PCMS DISPLAYS

PCMS DISPLAY PRIOR TO CLOSURE

MESSAGE 1:	SUNPASS ONLY LANES	MESSAGE 2:	CLOSED "DATE(S)"

PCMS DISPLAY DURING CLOSURE

MESSAGE 1:	SUNPASS LANES CLOSED	MESSAGE 2:	USE CASH LANES

GENERAL NOTES

1. This Plan is to be used at Mainline Plazas Only.
2. This Plan is for lane closures of any time length.
3. Plaza canopies which have existing DMS signs on the canopies shall display the message "LANE CLOSED" for the duration of this closure.
4. For planned lane closure, a portable changeable message sign shall be placed and shall display the message shown at a minimum of one week prior to closure. If planned lane closure is less than one week, place portable changeable message sign immediately using "prior to closure" messages.
5. A truck/trailer mounted attenuator is required.
6. Lane closure configurations applicable to 2 or 3 lane open road tolling plazas.
7. At least 48 hours prior to any closure, other than emergencies, the plaza manager shall be notified for security and staffing.

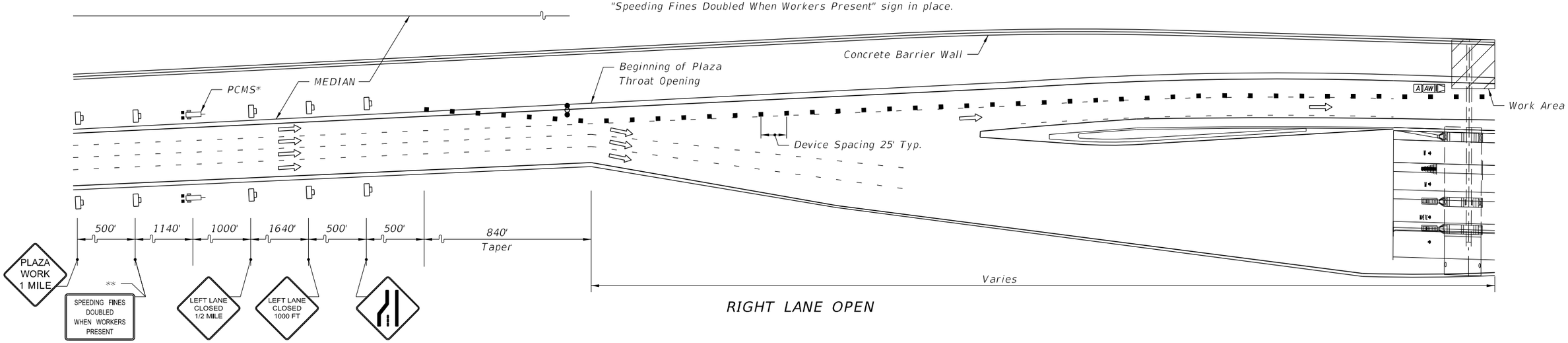
OUTSIDE OPEN ROAD TOLLING LANES

9/18/2018 10:55:34 AM

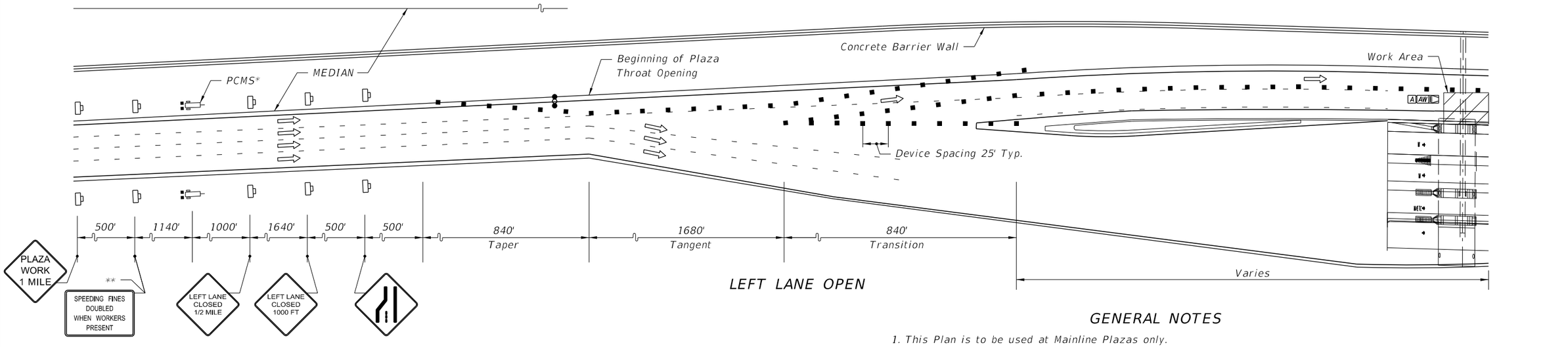
LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/17			FDOT FY 2019-20 STANDARD PLANS	TOLL PLAZA TRAFFIC CONTROL STANDARDS	102-667	3 of 6

* If there is no room in the median for the PCMS sign, then locate it on the outside of the roadway only.

** Install temporary Speeding Fines Doubled sign only if there is not an existing permanent "Speeding Fines Doubled Through Toll Plaza" sign or an existing "Speeding Fines Doubled When Workers Present" sign in place.



RIGHT LANE OPEN



LEFT LANE OPEN

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic
- Advance Warning Vehicle Equipped with Advance Warning Arrow Board and Truck/Trailer Mounted Attenuator
- Portable Changeable (Variable) Message Sign

PCMS DISPLAYS

PCMS DISPLAY PRIOR TO CLOSURE

Message 1:	ONE SUNPASS ONLY	Message 2:	LANE OPEN "DATE(S)"

PCMS DISPLAY DURING CLOSURE

Message 1:	SUNPASS ONLY LANE	Message 2:	OPEN USE CAUTION

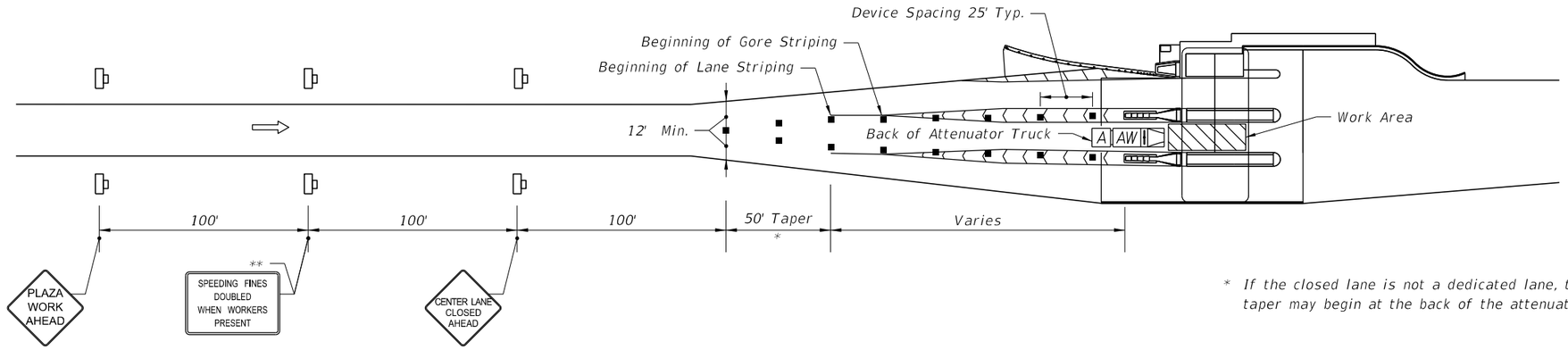
GENERAL NOTES

1. This Plan is to be used at Mainline Plazas only.
2. This Plan is for lane closures of any time length.
3. Plaza canopies which have existing DMS signs on the canopies shall display the message "LANE CLOSED" for the duration of this closure.
4. For planned lane closure, a portable changeable message sign shall be placed and shall display the messages shown at a minimum of one week prior to closure. If planned lane closure is less than one week, place portable changeable message sign immediately using "prior to closure" messages.
5. A truck/trailer mounted attenuator is required.
6. Lane closure configurations applicable to 2 or 3 lane open road tolling plazas.
7. At least 48 hours prior to any closure, other than emergencies, the plaza manager shall be notified for security and staffing.

INSIDE OPEN ROAD TOLLING LANES

9/18/2018 10:55:35 AM

LAST REVISION	REVISION	DESCRIPTION:	FY 2019-20 STANDARD PLANS	TOLL PLAZA TRAFFIC CONTROL STANDARDS	INDEX	SHEET
11/01/17					102-667	4 of 6



* *If the closed lane is not a dedicated lane, the 50' taper may begin at the back of the attenuator truck.*

EXHIBIT A

DEDICATED, CASH, OR MIXED-USE LANES IN CENTER - ONE LANE CLOSED
(This same plan can be used for any non-dedicated lane even if they are not in the center of the plaza)

** *Install temporary Speeding Fines Doubled sign only if there is not an existing permanent "Speeding Fines Doubled Through Toll Plaza" sign or an existing "Speeding Fines Doubled When Workers Present" sign in place.*

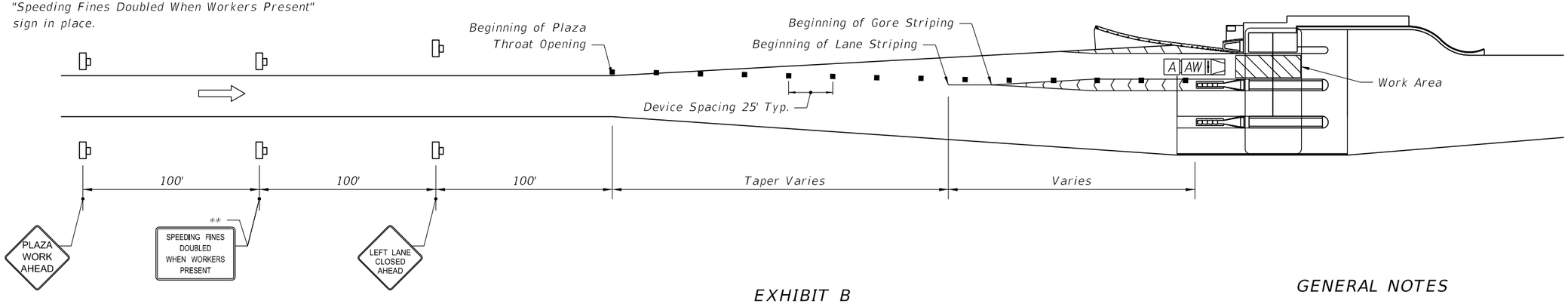


EXHIBIT B

DEDICATED LANE INSIDE OR OUTSIDE - ONE LANE CLOSED
(Outside Lane Closure is a Mirror Image of this Exhibit)

SYMBOLS

- *Work Area*
- *Channelizing Device (See Index 102-600)*
- *Work Zone Sign*
- *Lane Identification + Direction of Traffic*
- *Advance Warning Vehicle Equipped with Advance Warning Arrow Board and Truck/Trailer Mounted Attenuator*

GENERAL NOTES

1. *This Plan is for lane closures that exceed three hours.*
2. *If the closed lane is a dedicated lane, Exhibit A shall be used at Ramp Plazas only. If the closed lane is a cash or mixed-use lane, Exhibit A may be used at Ramp or Mainline Plazas.*
3. *A truck/trailer mounted attenuator is required.*
4. *Exhibit B shall be used at Ramp Plazas only.*
5. *Lane use control lights, signs, or signals over toll lanes shall be switched to the appropriate symbol, message, or correct color prior to the start of any lane closure. They should also be switched at project completion.*
6. *At least 48 hours prior to any closure, other than emergencies, the plaza manager shall be notified for security and staffing.*

MAINLINE PLAZAS & RAMP PLAZAS

9/18/2018 10:55:35 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2019-20 STANDARD PLANS	TOLL PLAZA TRAFFIC CONTROL STANDARDS	INDEX	SHEET
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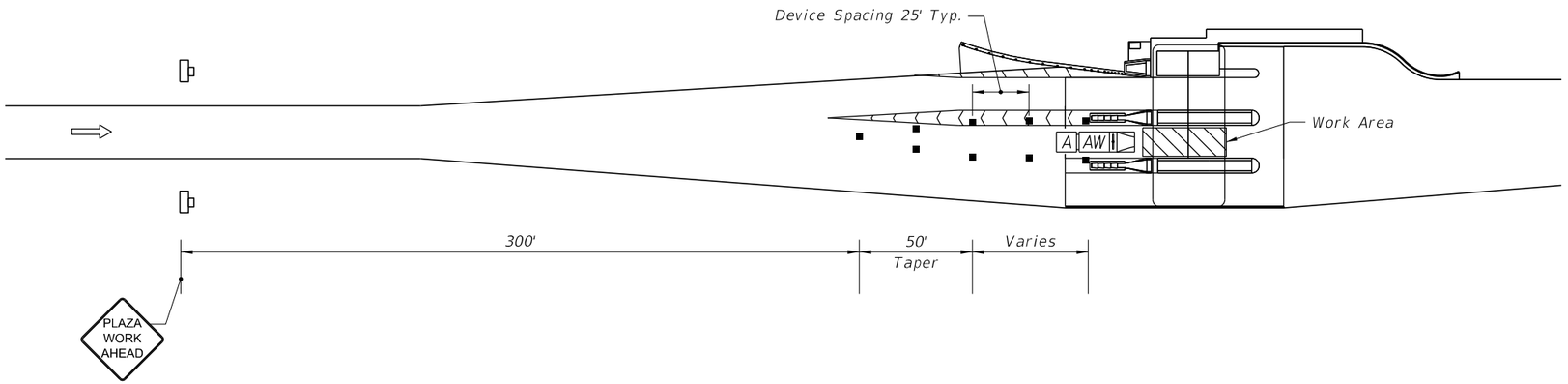
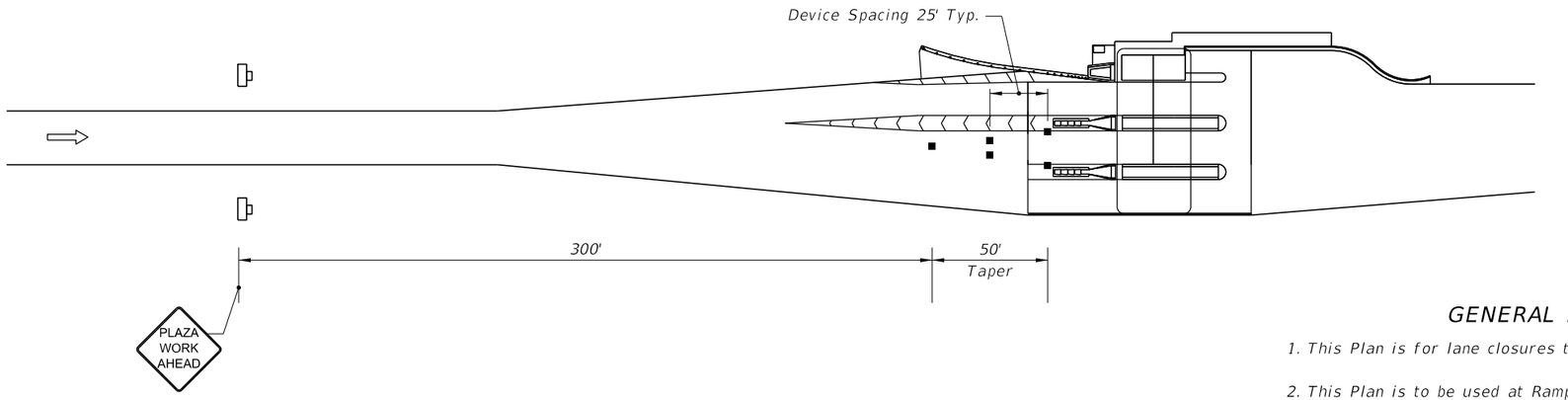


WORK DONE WITHIN TRAVEL LANE - ONE LANE CLOSED



WORK NOT DONE WITHIN TRAVEL LANE - ONE LANE CLOSED

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification + Direction of Traffic
- A AW — Advance Warning Vehicle Equipped with Advance Warning Arrow Board and Truck/Trailer Mounted Attenuator

GENERAL NOTES

1. This Plan is for lane closures that are three hours or less.
2. This Plan is to be used at Ramp or Mainline Plazas.
3. This plan can be used for any lane, with appropriate modifications, even if it is not in the center of the Plaza.
4. Lane use control lights, signs, or signals over toll lanes shall be switched to the appropriate symbol, message, or correct color prior to the start of any lane closure. They should also be switched at project completion.
5. At least 48 hours prior to any closure, other than emergencies, the plaza manager shall be notified for security and staffing.
6. A Truck/Trailer Mounted Attenuator is required for all aerial work operations (lift truck). For non-aerial operations, the Truck Mounted Attenuator or additional devices may be required by the Engineer based on the work being performed.

SHORT-TERM CLOSURES

9/18/2018 10:55:36 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TOLL PLAZA TRAFFIC CONTROL STANDARDS	INDEX	SHEET
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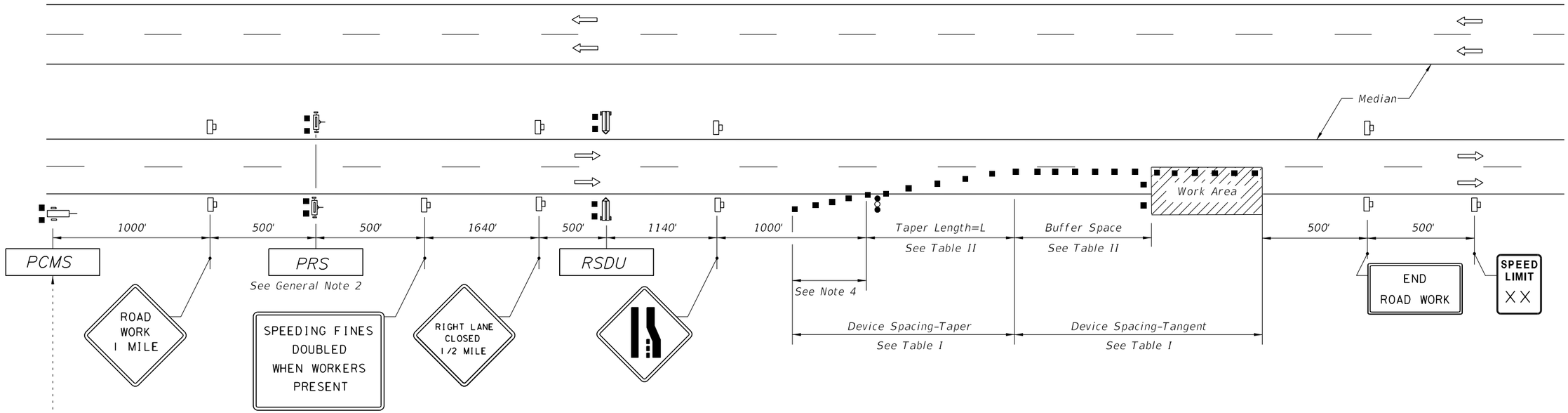


TYPICAL PCMS DISPLAY

With speed reduction:
Message 1: WORKERS PRESENT AHEAD
Message 2: SPEED REDUCED NEXT XMI

Without speed reduction:
Message 1: WORKERS PRESENT AHEAD
Message 2: NEXT X MILES

SYMBOLS

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Advance Warning Arrow Board
- Lane Identification + Direction of Traffic
- (1) PCMS= Portable Changeable(Variable) Message Sign
- (2) PRS= Portable Regulatory Sign- Speed Limit When Flashing
- (2) RSDU= Radar Speed Display Unit

Table I
Device Spacing

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

Table II
Buffer Space and Taper Length

Posted Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)	
	Dist. (ft.)	L (ft.)	Notes (Merge)
55	495	660	L = WS
60	570	720	
65	645	780	
70	730	840	

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in the notes column.
Where:
L= Length of taper in feet
W= Width of lateral transition in feet
S= Posted speed limit (mph)

GENERAL NOTES:

1. Use the MAS for lane closures of 5 day or more on multilane divided facilities with a posted speed of 55 MPH or greater when workers are present and not protected by a barrier.
2. For posted speeds of 65 MPH or greater, reduce Work Zone Speeds by 10 MPH. For posted speeds of 60 MPH, use a Work Zone Speed of 55 MPH.
3. Right lane closure shown, left lane closure similar using left lane signing.
4. Use shoulder taper in accordance with Index 102-612 for shoulder widths 8 feet or greater.
5. See Index 102-600 for general TCZ requirements and additional information.

DELETED INDEX. MOVED DETAIL TO INDEX 102-000 AND REVISED. USAGE CRITERIA MOVED TO FDM.

10/18/2018 10:19:22 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	MOTORIST AWARENESS SYSTEM (MAS)	INDEX	SHEET
11/01/17						102-670	1 of 1

TABLE OF CONTENTS FOR INDEX 102-000

TABLE OF CONTENTS FOR 102 SERIES

GENERAL NOTES:

1. Use this Index in accordance with the Plans and Indexes 102-005 to 102-080.

2. See the Plans for Work Zone Speed.

CLEAR ZONE WIDTHS FOR WORK ZONES

Work Zone Speed (mph)	Travel Lanes & Multilane Ramps (feet)	Auxiliary Lanes & Single Lane Ramps (feet)
≥ 60	30	18
55	24	14
45-50	18	10
≤ 40	14	10
All Speeds with Curb & Gutter	4' Behind Face of Curb	

CHANNELIZING DEVICE SPACING

Work Zone Speed (mph)	Max. Spacing (feet)			
	Cones or 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

TAPER LENGTH "L"

Work Zone Speed (mph)	Min. Length (feet)
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$
Where: W = width of offset in feet S = speed in mph	

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

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.

DRAFT

TABLE OF CONTENTS

TEMPORARY TRAFFIC CONTROL TABLES

7/10/2019 10:30:57 AM

LAST REVISION	REVISION	DESCRIPTION:

FDOT FY 2020-21 STANDARD PLANS

TEMPORARY TRAFFIC CONTROL GENERAL INFORMATION AND DEVICES

INDEX 102-000

DROP-OFF NOTES:

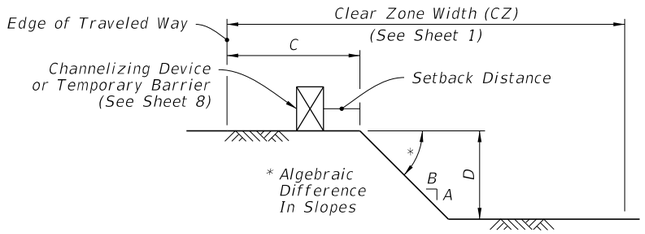
1. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required (See Table 1). A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slope (A:B) steeper than 1:4. In superelevated sections, the algebraic difference in slopes should not exceed 0.25 (See Drop-off Condition Detail).

2. Optionally, mitigate drop-offs by placing slopes of 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, LSD. 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 1, any drop-off condition that is created and restored within the same work period will not be subject to the use of temporary barriers. However, channelizing devices will be required.

6. When permanent curb heights are ≥ 6", no channelizing device will be required. For curb heights < 6", see Table 1.



DROP-OFF DETAIL

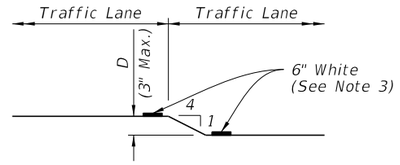
Table 1 Drop-off Protection Requirements			
Condition	D (inches)	C (feet)	Device Required
1	>3	2 – 12	Temporary Barrier
2	>3 to ≤5	12 – CZ	Channelizing Device
3	>5	2 – CZ	Temporary Barrier
4	Removal of Bridge or Retaining Wall Barrier		Temporary Barrier
5	Removal of portions of Bridge Deck		Temporary Barrier
Note: Do not allow any drop-off conditions greater than 3 inches within two feet of the edge of traveled way.			

MILLING & RESURFACING NOTES:

1. Whenever there is a difference in elevation between adjacent travel lanes, place "Uneven Lanes" signs (W8-11) at intervals of 0.5 miles or less.

2. If D is 1" or less, no drop-off treatment is required.

3. If the slope of the drop-off is greater than 1:4 (not to exceed 1:1), place a 6" white solid line on each side of the drop-off. Additionally, place "Stay In Your Lane" signs (MOT-1-06) as a supplement to the "Uneven Lanes" signs (W8-11). This condition may be used for distances of three miles or less.



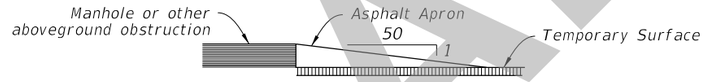
MILLING & RESURFACING LANE
DROP-OFF TREATMENT DETAIL

MANHOLE/CROSSWALK/JOINT DROP-OFF NOTES:

1. Construct temporary asphalt apron for manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than ¼".

2. Construct temporary asphalt apron for all transverse joints that have a difference in elevation of 1" or more.

3. Remove aprons prior to constructing the next lift of asphalt.



MANHOLE/CROSSWALK/JOINT DROP-OFF DETAIL

PEDESTRIAN WAY DROP-OFF NOTES:

1. A pedestrian way drop-off is defined as either:

   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.

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DROP-OFFS

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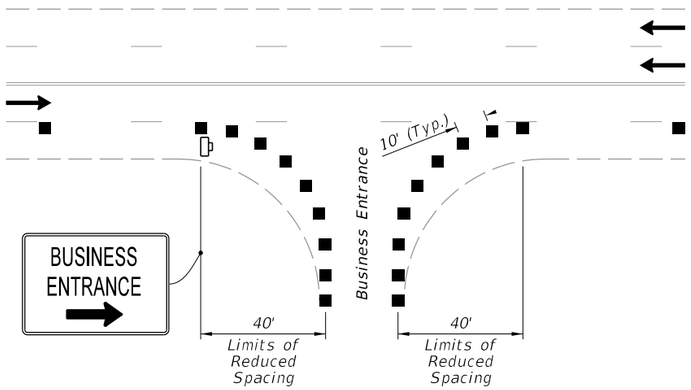


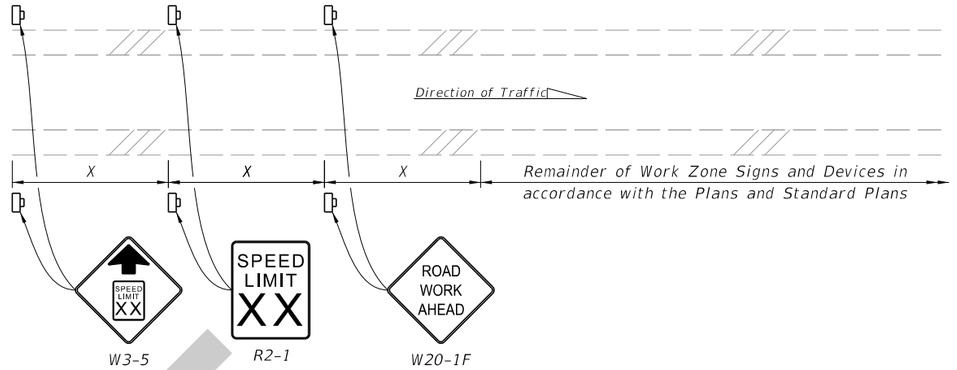
BUSINESS SIGN AND CHANNELIZING DEVICE PLACEMENT AT BUSINESS ENTRANCE

NOTES:

1. *Use this detail when work disrupts a business entrance for greater than one entire calendar day.*

2. *For single business entrances, place one 24"X36" business sign with the business name at each affected driveway entrance. Logos may be provided by the business owners. Alternatively, a sign with the message "Business Entrance" (see Index 700–102) may be used when approved by the Engineer.*

3. *When two or more businesses share a common driveway entrance, place a 24"X36" with the message "Business Entrance" (see Index 700–102) at the common driveway entrance.*



SPEED REDUCTION SIGNING

NOTES:

1. *X = Work Zone Sign Spacing*

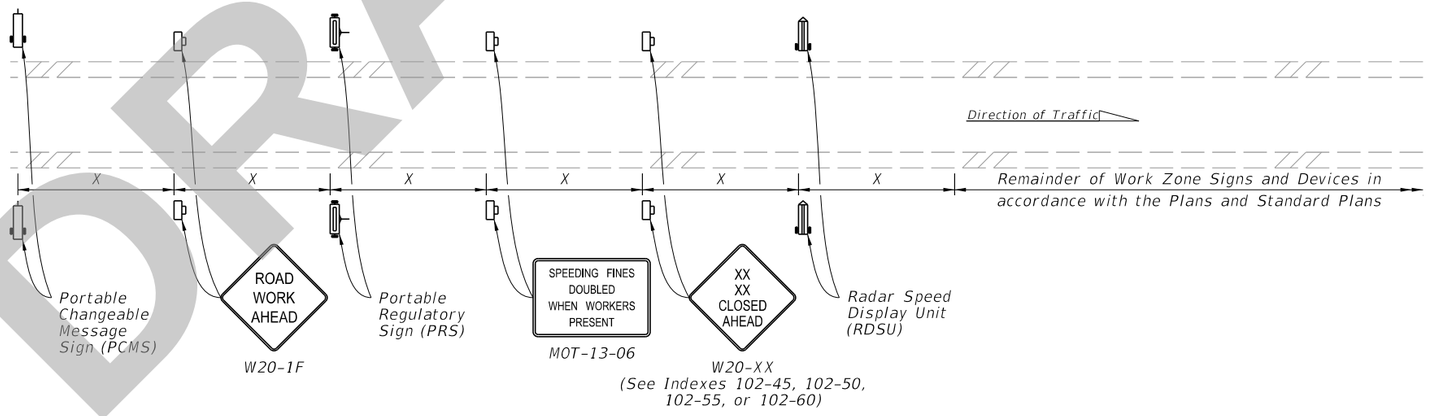
2. *When called for in the Plans, use this detail in accordance with the Plans and Standard Plans. Place the speed reduction signs (W3–5 and R2–1) in advance of the "Road Work Ahead" (W20–1F) as shown.*

3. *Do not use this detail in conjunction with the Motorist Awareness System.*

4. *For speed reductions greater than 10 MPH, reduce speed in 10 MPH increments of 'X'.*

4. *Place additional "Speed Limit" signs (R2–1) at intervals of no less than one mile for rural conditions and 1,000 feet for urban conditions.*

5. *For undivided roadways, omit the signs shown in the median.*



MOTORIST AWARENESS SYSTEM

TYPICAL PCMS DISPLAY:

With speed reduction:
- *Message 1: WORKERS PRESENT AHEAD*
- *Message 2: SPEED REDUCED NEXT XXMI*

Without speed reduction:
- *Message 1: WORKERS PRESENT AHEAD*
- *Message 2: NEXT XX MILES*

NOTES:

1. *X = Work Zone Sign Spacing*

2. *When called for in the Plans, use the Motorist Awareness System (MAS) in accordance with the Plans, and Standard Plans, Indexes 102–45, 102–50, 102–55, and 102–60. When using this detail with the Indexes, place the MAS devices (i.e., PCMS, PRS, and RDSU) within the Work Zone Signing as shown.*

3. *Omit the PCMS in the median for roadways with three lanes or less in the same direction of traffic.*

SYMBOLS:

- ■ *Channelizing Device (See Sheet 8)*
- → *Lane Identification and Direction of Traffic*
- *Work Zone Sign*

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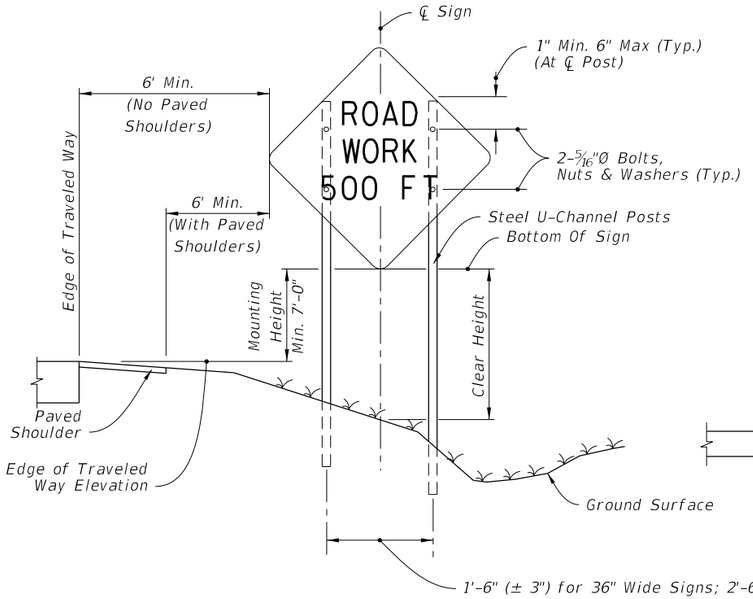
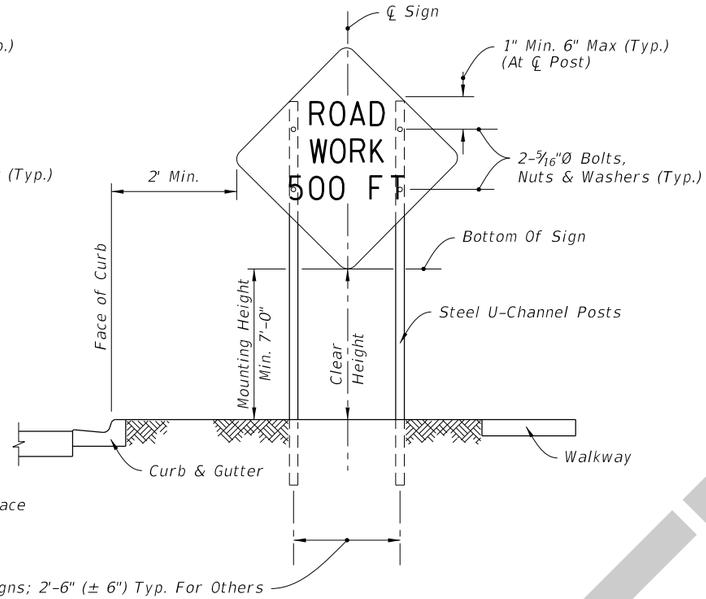
MISCELLANEOUS DETAILS

LAST REVISION	REVISION	DESCRIPTION:	FY 2020-21 STANDARD PLANS	TEMPORARY TRAFFIC CONTROL GENERAL INFORMATION AND DEVICES	INDEX 102-000	SHEET 3 of 8



2 POSTS - FLUSH SHOULDER ROADWAY
(1 Post Similar)

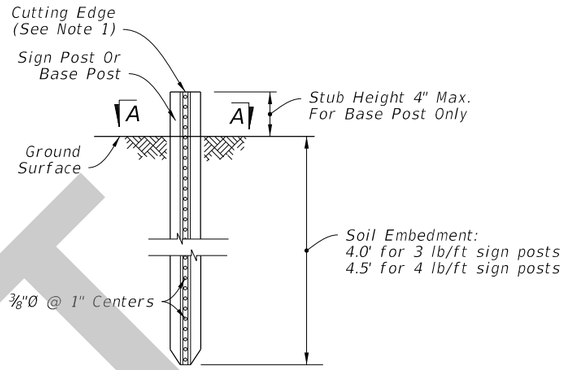


2 POSTS - CURB AND GUTTER ROADWAY
(1 Post Similar)

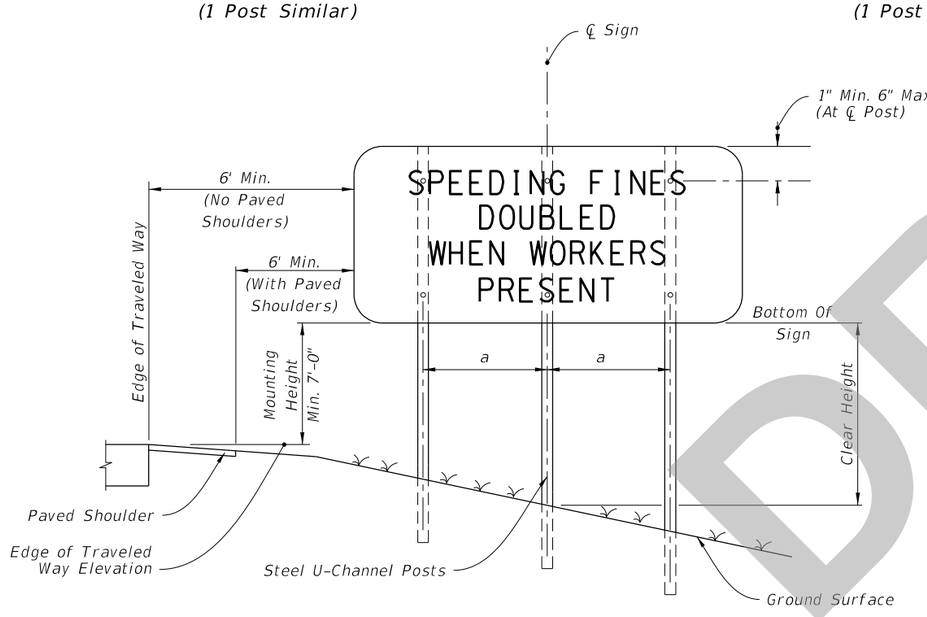
SECTION A-A
(Schematic)

WORK ZONE SIGN POST TABLE:

SIGN AREA (ft^2)	NUMBER OF SIGN POSTS
< 9	1
9 to < 20	2
≥ 20 to < 50	3
50	4



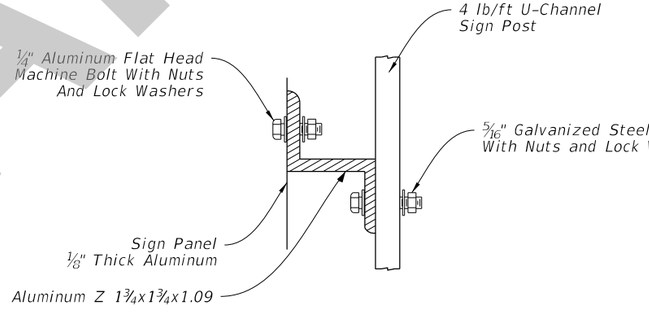
TYPICAL FOUNDATION DETAIL



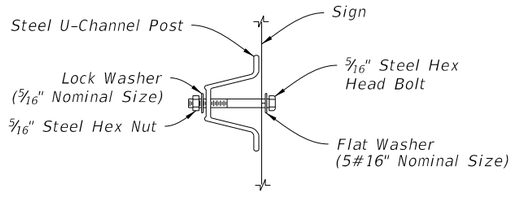
3 POSTS - FLUSH SHOULDER ROADWAY

Where: W = 48": a = 1' – 4½" (± 1")
W = 60": a = 1' – 9" (± 1")
W = 72": a = 2' – 1" (± 1")

SIGN SUPPORT MOUNTING DETAILS



SIGN ATTACHMENT FOR 4 LB/FT
SIGN POSTS DETAIL



SIGN ATTACHMENT FOR 3 LB/FT
SIGN POSTS DETAIL

SIGN ATTACHMENT DETAILS

NOTES:

1. Do not install bolts closer than 1" to cutting edge of Base Post.
2. Soil plates are not required for posts installed in asphalt pavement, shoulder pavement, sidewalk, or existing rock with a minimum cumulative depth of 2'.
3. Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.
4. For diamond warning signs with supplement plaque (up to 5 ft^2 in area), use 4 lb/ft posts for Clear Height up to 10'.

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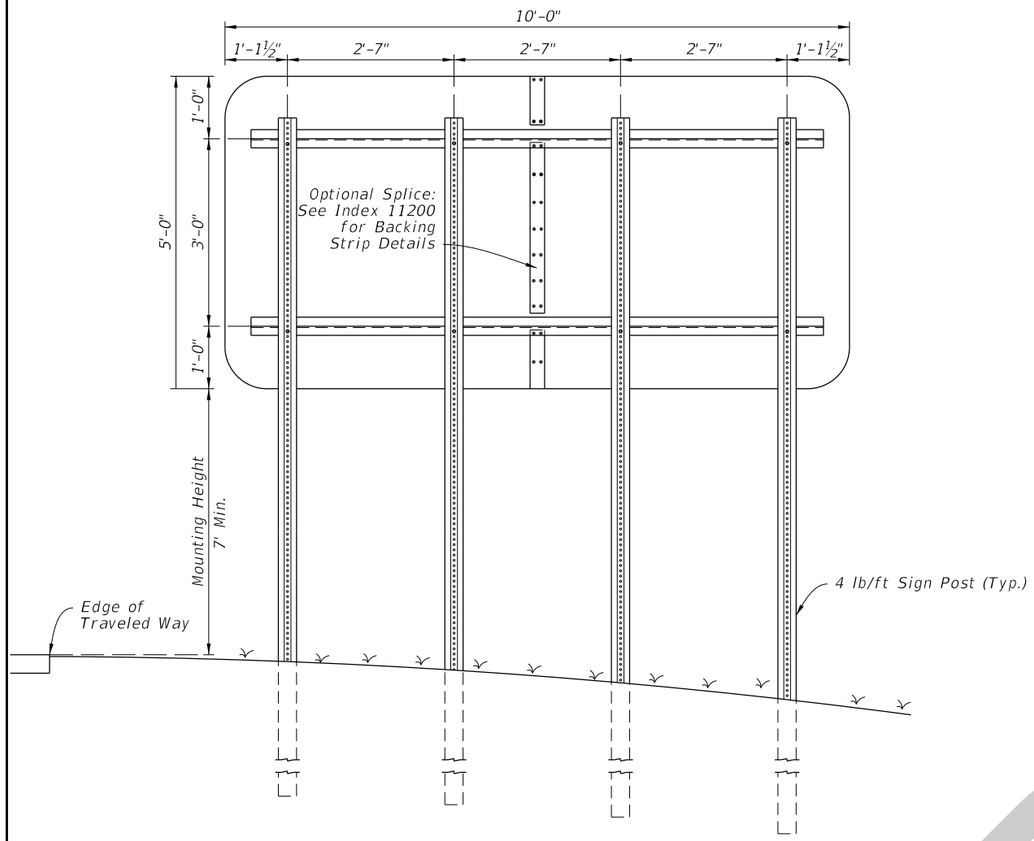
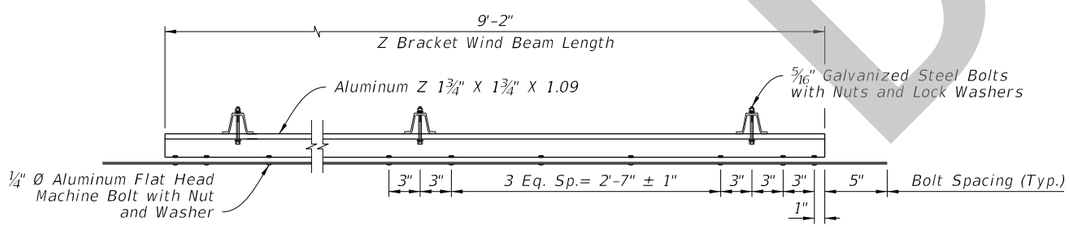
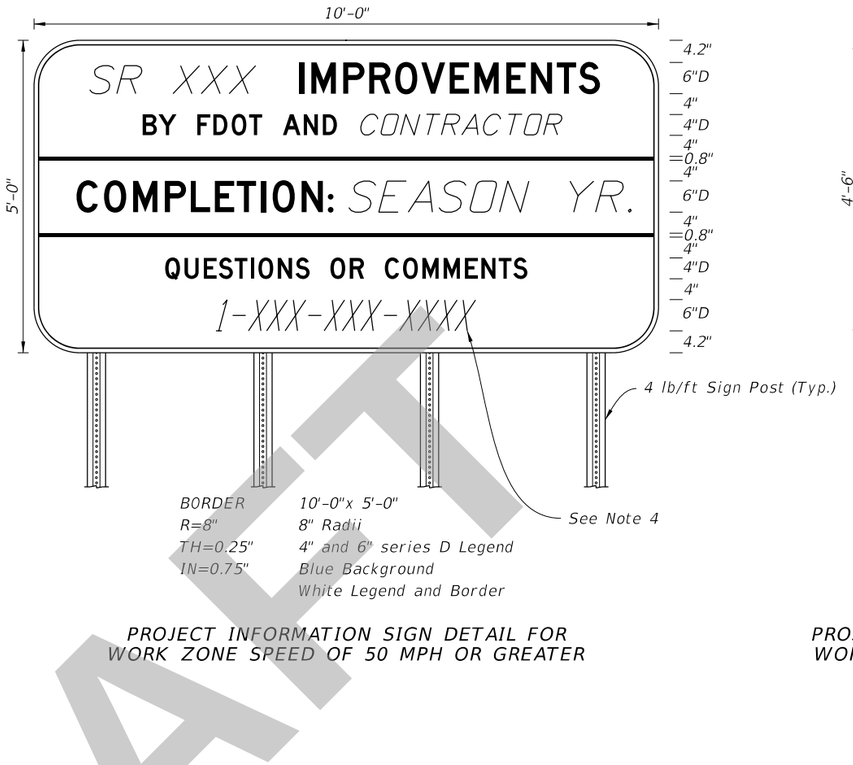
POST-MOUNTED WORK ZONE SIGN SUPPORTS



4 POSTS SIGN SUPPORT MOUNTING DETAIL

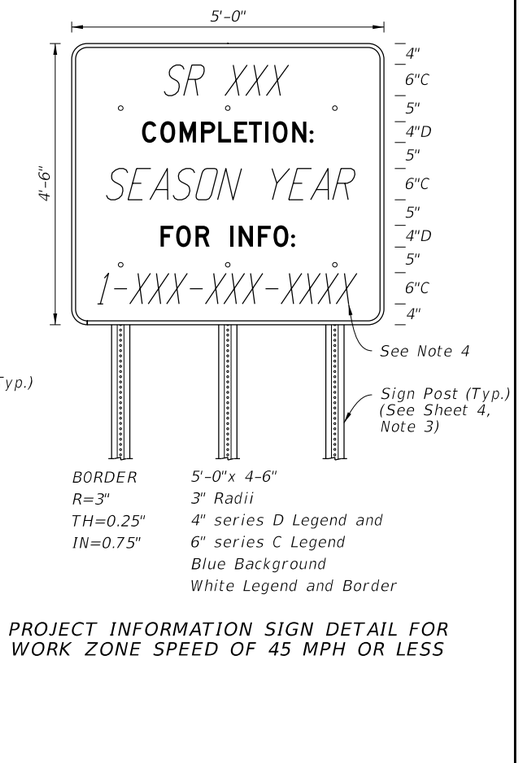


BRACKET DETAIL



BORDER	10'-0"x 5'-0"
R=8"	8" Radii
TH=0.25"	4" and 6" series D Legend
IN=0.75"	Blue Background
	White Legend and Border

PROJECT INFORMATION SIGN DETAIL FOR
WORK ZONE SPEED OF 50 MPH OR GREATER



BORDER	5'-0"x 4'-6"
R=3"	3" Radii
TH=0.25"	4" series D Legend and
IN=0.75"	6" series C Legend
	Blue Background
	White Legend and Border

PROJECT INFORMATION SIGN DETAIL FOR
WORK ZONE SPEED OF 45 MPH OR LESS

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NOTES:

1. Road designation should be the most common designation (i.e., I-Interstate, SR-State Road, or US).
2. Italic text on signs indicates variable information that is specific to the project.
3. See Sheet 4 for the Typical Foundation Detail and the Sign Attachment Details.
4. Under "Questions or Comments", use the project website, or a telephone number for those projects without websites.

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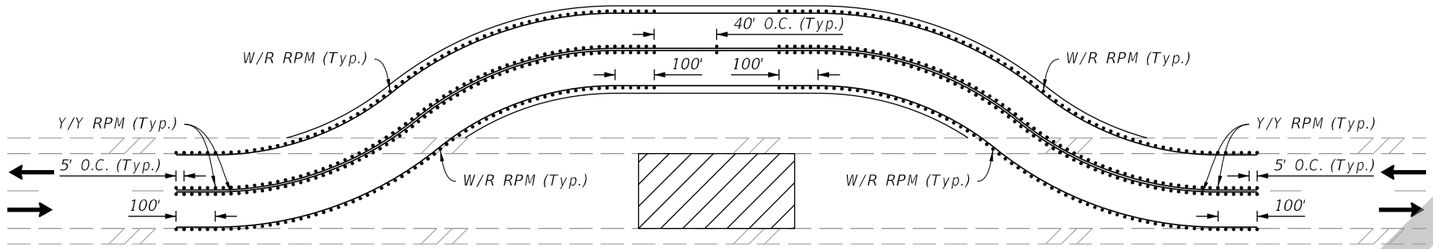
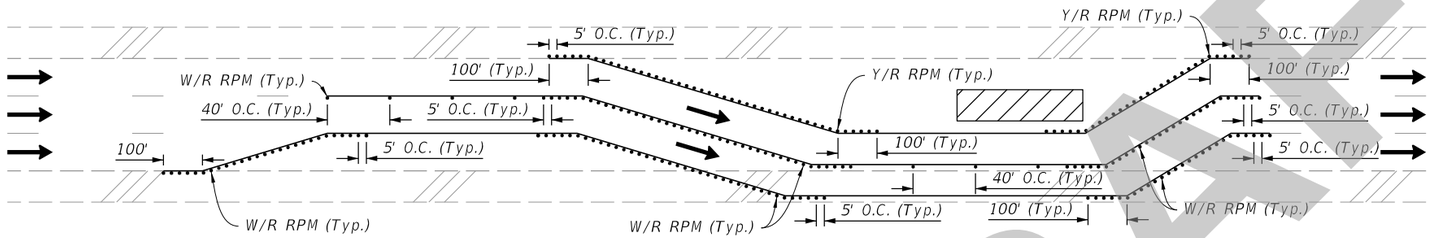
PROJECT INFORMATION SIGNS



RPM PLACEMENT ON TWO-LANE ROADWAYS



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

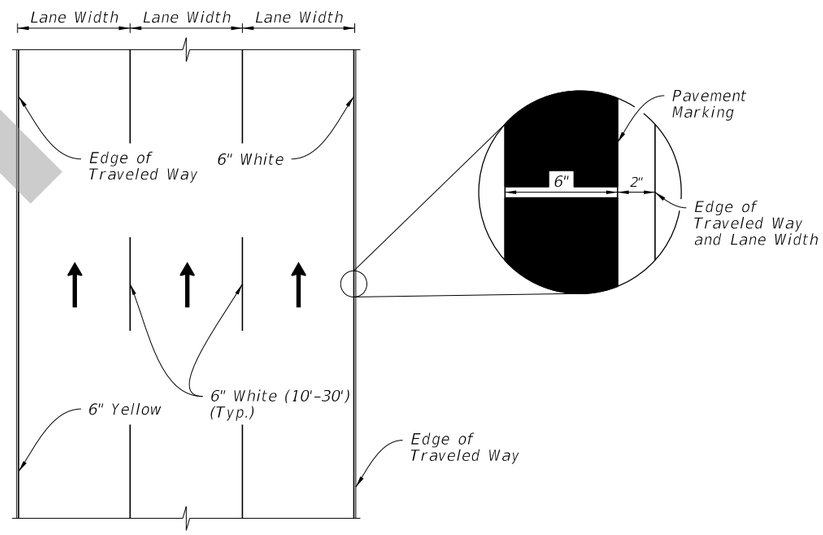
RPM PLACEMENT IN WORK ZONES

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.



PLACEMENT OF PAVEMENT MARKINGS

SYMBOLS:

Work Space

Lane Identification and Direction of Traffic

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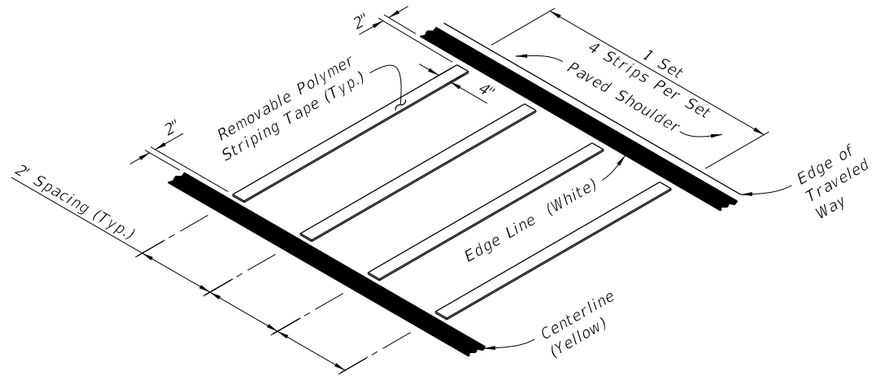
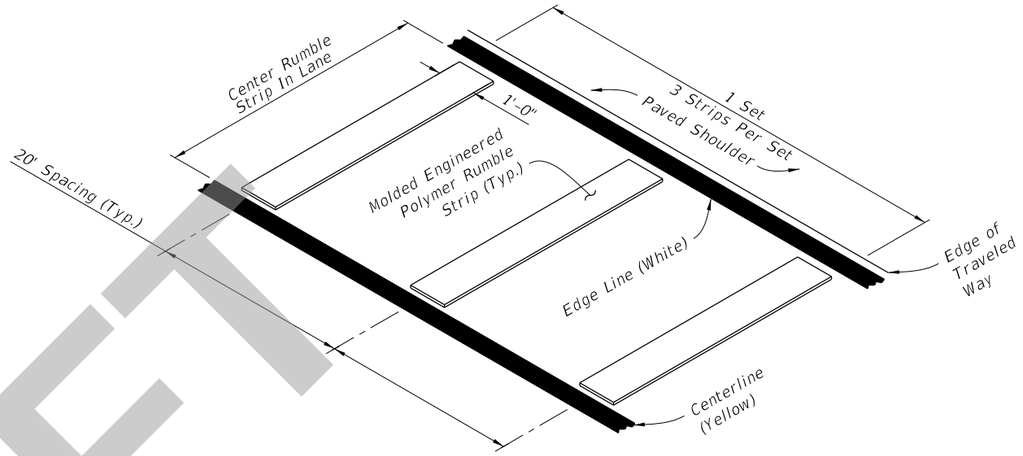
WORK ZONE PAVEMENT MARKINGS



REMOVABLE POLYMER STRIPING TAPE



MOLDED ENGINEERED POLYMER MATERIAL

TEMPORARY RAISED RUMBLE STRIP SETS

NOTE:

Use Temporary Raised Rumble Strips in accordance with the Plans and Specification 102.

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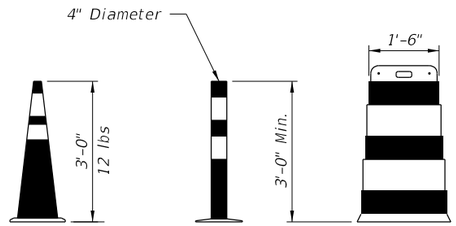
TEMPORARY RAISED RUMBLE STRIPS

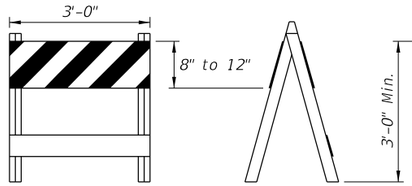
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2020-21 STANDARD PLANS	TEMPORARY TRAFFIC CONTROL GENERAL INFORMATION AND DEVICES	INDEX 102-000	SHEET 7 of 8



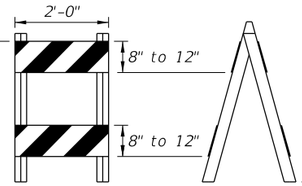
CONES

TUBULAR MARKER

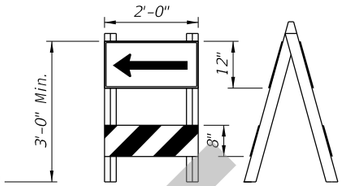
PLASTIC DRUMS



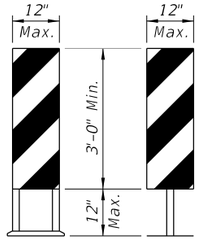
TYPE I BARRICADE



TYPE II BARRICADE

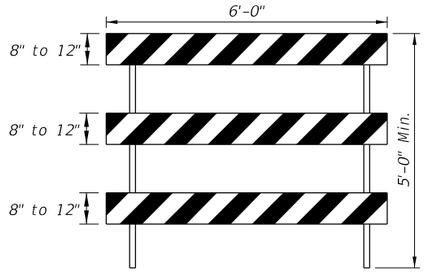


DIRECTION INDICATOR BARRICADE



A-FRAME POST MOUNT

VERTICAL PANEL



TYPE III BARRICADE

CHANNELIZING DEVICES

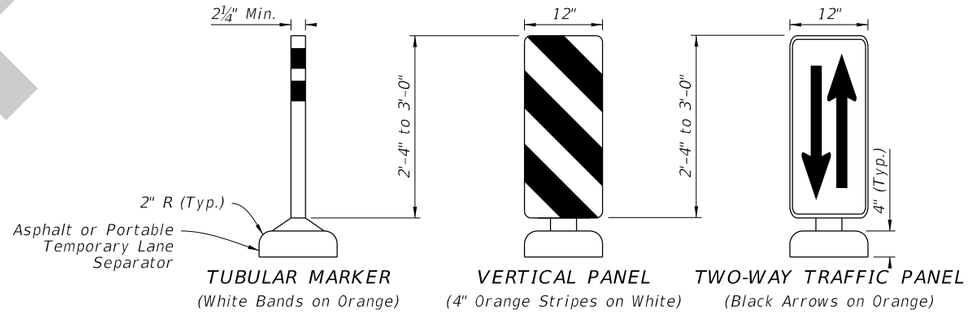
NOTES:

1. For pedestrian longitudinal channelizing device requirements, see Specification 990.

2. 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

3. 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.



TUBULAR MARKER
(White Bands on Orange)

VERTICAL PANEL
(4" Orange Stripes on White)

TWO-WAY TRAFFIC PANEL
(Black Arrows on Orange)

TEMPORARY LANE SEPARATOR

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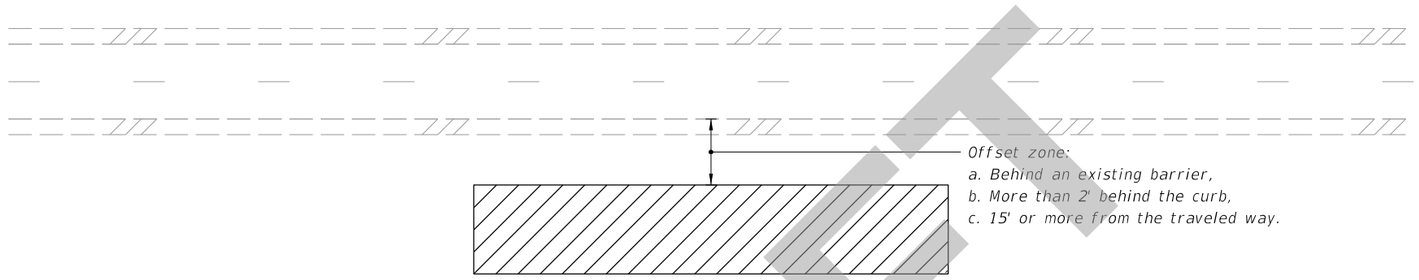
7/10/2019 10:31:11 AM



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NOTES:

1. As determined by the Engineer, use a flagger, shoulder closure, or lane closure to accomodate a significant amount of work vehicle ingress and egress.

2. This Index may be applied to the medians of divided roadways.

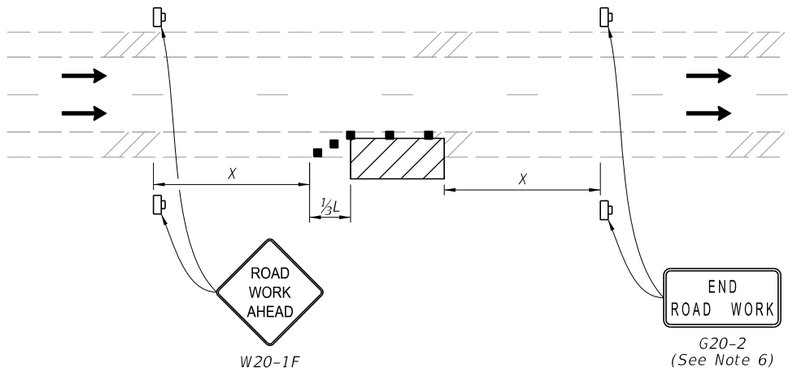
SYMBOLS:

Work Space

APPLIES TO TWO-LANE AND MULTILANE ROADWAYS

7/10/2019 10:31:13 AM

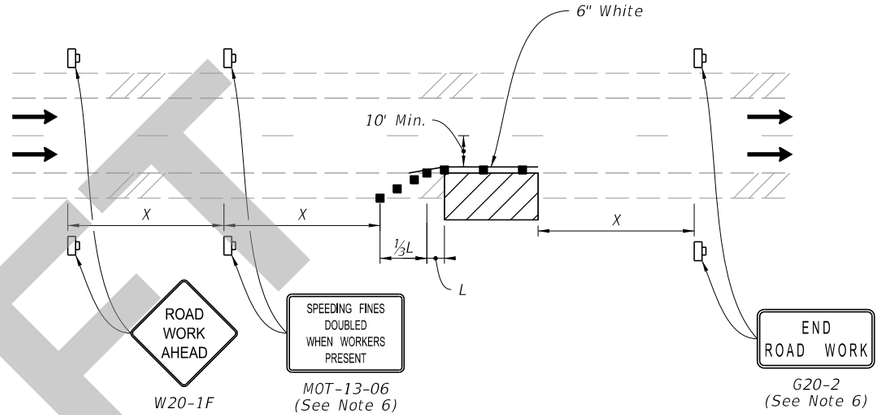
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	WORK BEYOND THE SHOULDER	INDEX 102-005	SHEET 1 of 1



W20-1F

G20-2 (See Note 6)

SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY
(Multilane Roadway Shown, Two-Lane Roadway Similar)



W20-1F

MOT-13-06 (See Note 6)

G20-2 (See Note 6)

SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY WITH WORK ZONE SPEED OF 45 MPH OR LESS
(Multilane Roadway Shown, Two-Lane Roadway Similar)

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NOTES:

1. L = Taper Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L" and "X" values.
2. For incidental work (e.g., mowing or litter removal), only the Road Work Ahead sign is required.
3. As determined by the Engineer, use a flagger or lane closure to accommodate a significant amount of work vehicle ingress and egress.
4. For work less than two feet from the traveled way and work zone speed greater than 45 MPH, use a lane closure.
5. This Index may be applied to the medians of divided roadways.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2) along with associated work zone sign spacing distances may be omitted when the temporary condition is in place for 24 hours or less.

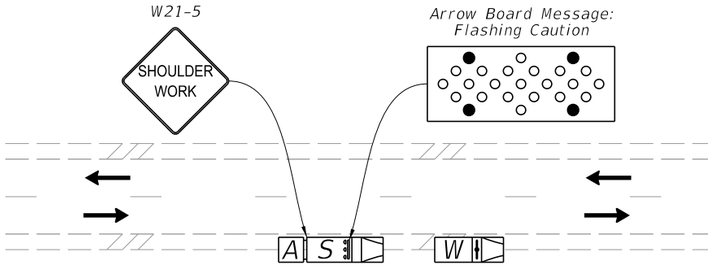
SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic

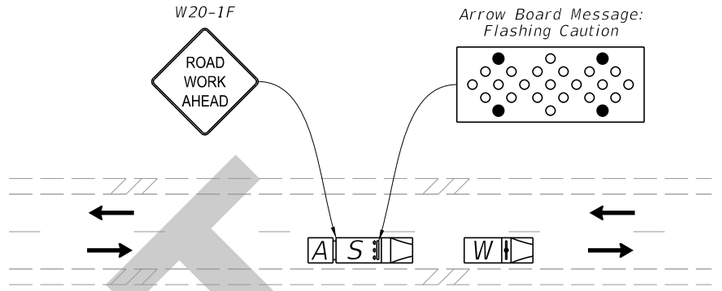
APPLIES TO TWO-LANE AND MULTILANE ROADWAYS

7/10/2019 10:31:14 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	WORK ON THE SHOULDER	INDEX 102-010	SHEET 1 of 1



WORK ON SHOULDER
(Two-Lane Roadway Shown, Multilane Roadway Similar)



WORK IN TRAVELED WAY - TWO-LANE ROADWAY, LANE CLOSURE

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SYMBOLS:

- Lane Identification and Direction of Traffic
- A — Truck Mounted Attenuator (TMA)
- W — Work Vehicle With Warning Lights
- S — Shadow (S) Vehicle With Warning Lights And Arrow Board

GENERAL NOTES:

1. Vehicle-mounted signs shall be mounted with the bottom of the sign at a minimum height of 48 inches above the pavement. Vehicle mounted changeable message signs may be used in lieu of truck mounted static signs. Changeable message signs shall flash alternately to read "Left or Right Lane" or "Two Left or Two Right Lanes", "Closed Ahead", and the arrow symbol. Arrow boards shall not be used with truck mounted changeable message signs. Sign legends shall be covered or turned from view when work is not in progress.

2. For multilane roadways with curb and no paved shoulder, omit the shadow vehicle that would have been used on the paved shoulder. In such instances, the warning sign should be mounted on the shadow vehicle farthest from the work vehicle.

3. Minimize the longitudinal spacing between vehicles to deter road users from driving in between.

4. Use inverted plan of the illustrations for work on left side of roadways.

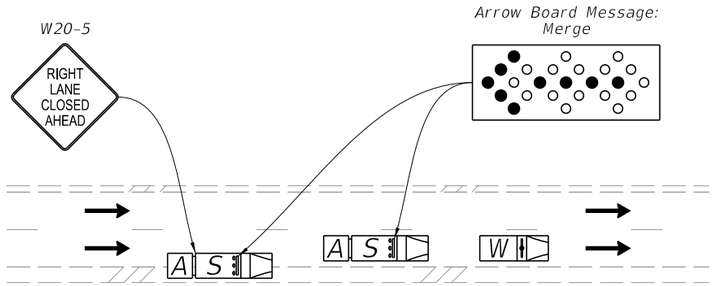
5. Ensure that all vehicles in the mobile operation convoy have functional two-way communication.

6. If the speed of the mobile operation exceeds the existing posted speed limit on limited access roadways and one half the existing posted speed limit on other roadways, the Engineer may delete requirements for shadow vehicles and attenuators. In such situations, mount arrow board and sign on the work vehicle.

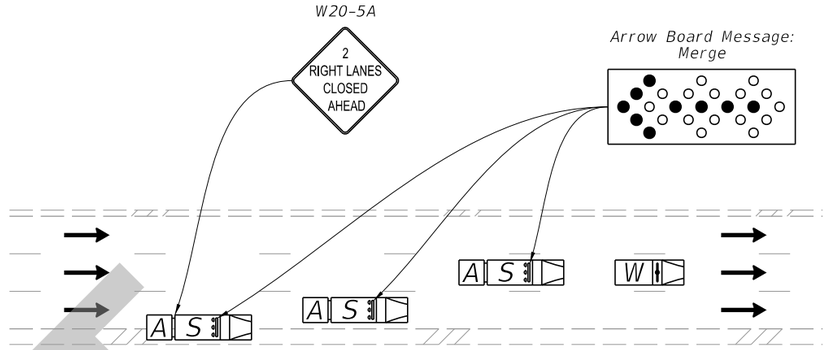
APPLIES TO TWO-LANE AND MULTILANE ROADWAYS

7/10/2019 10:31:16 AM

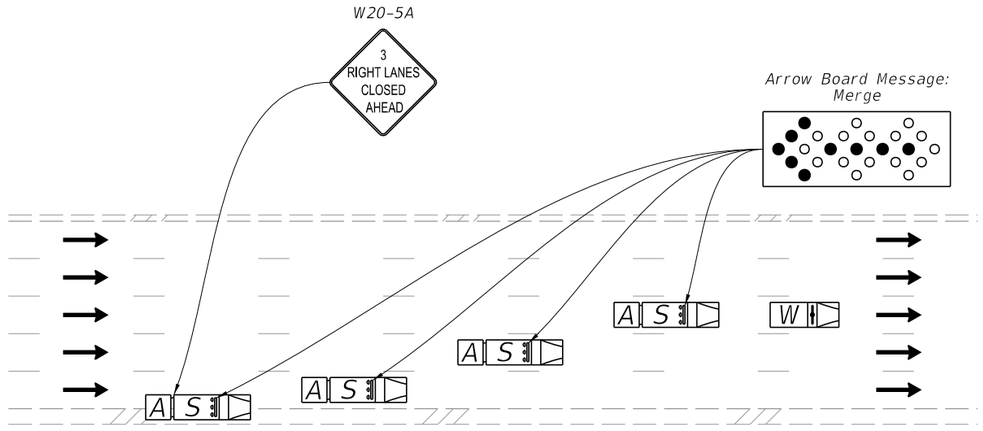
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	MOBILE OPERATIONS	INDEX 102-015	SHEET 1 of 2



WORK IN TRAVELED WAY - MULTILANE ROADWAY, SINGLE LANE CLOSURE



WORK IN TRAVELED WAY - MULTILANE ROADWAY, DOUBLE LANE CLOSURE



WORK IN TRAVELED WAY - MULTILANE ROADWAY, TRIPLE LANE CLOSURE

SYMBOLS:

- Lane Identification and Direction of Traffic
- A — Truck Mounted Attenuator (TMA)
- W — Work Vehicle With Warning Lights
- S — Shadow (S) Vehicle With Warning Lights And Arrow Board

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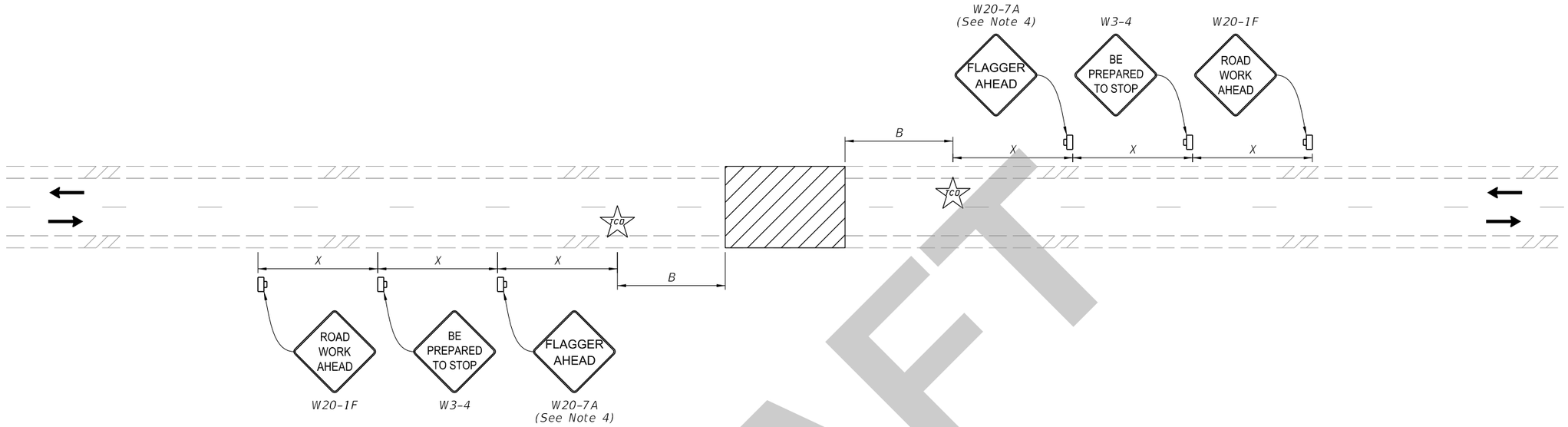
7/10/2019 10:31:17 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	MOBILE OPERATIONS	INDEX 102-015	SHEET 2 of 2



(Two-Lane Roadway Shown, Multilane Roadway Similar)

NOTES:

1. *B = Buffer Length*
   X = Work Zone Sign Spacing
   See Index 102-000 for "B" and "X" values.

2. *Do not use this Index for limited access roadways.*

3. *Use this Index for temporary daytime road closures of 5 minutes or less.*

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

SYMBOLS:

- *Work Space*
- *Work Zone Sign*
- *Lane Identification and Direction of Traffic*
- *Traffic Control Officer*

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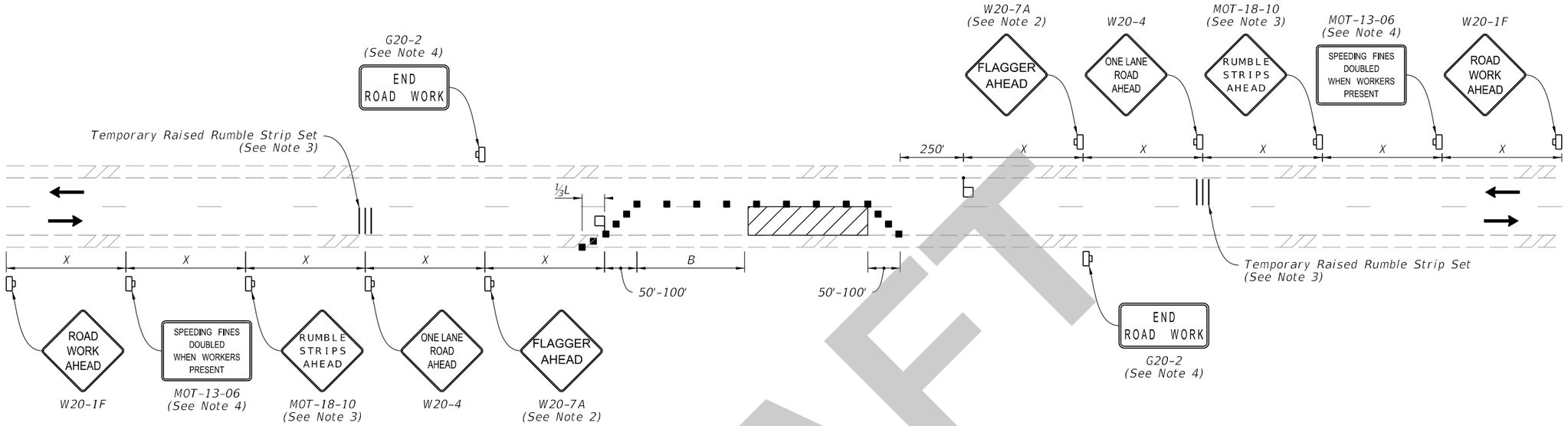
APPLIES TO TWO-LANE AND MULTILANE ROADWAYS

7/10/2019 10:31:19 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	TEMPORARY ROADWAY CLOSURE	INDEX 102-020	SHEET 1 of 1



SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Flagger

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L", "B", "X", and channelizing device spacing values.

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

3. Use temporary raised rumble strips in accordance with the Plans. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing distance. See Index 102-000 for temporary raised rumble strip details.

4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing distances, may be omitted when the work zone will be in place for 24 hours or less.

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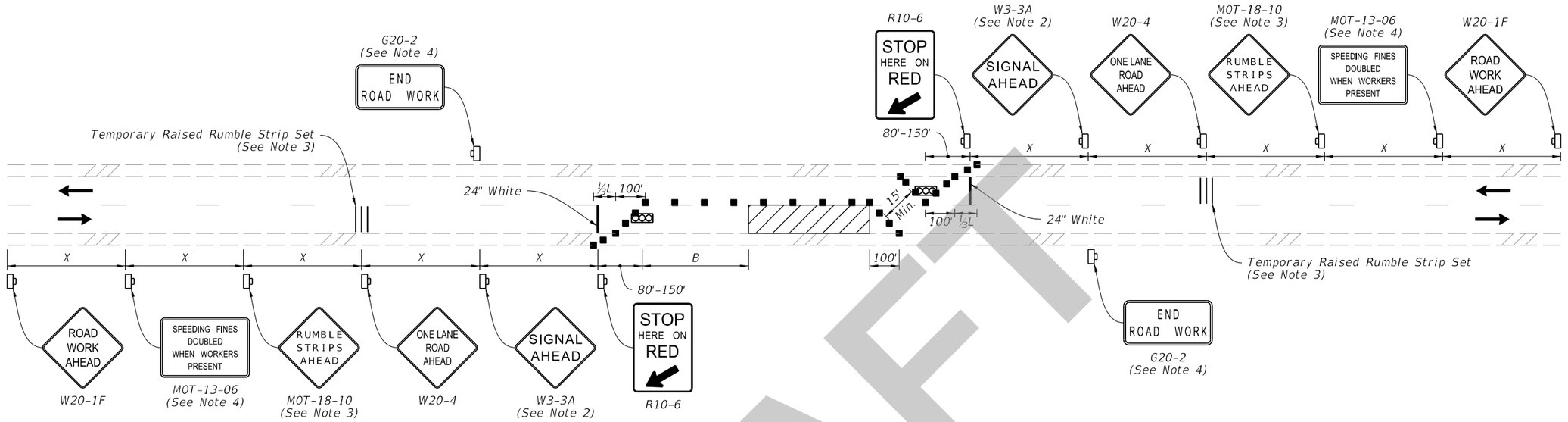
7/10/2019 10:31:21 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	TWO-LANE ROADWAY, LANE CLOSURE USING FLAGGERS	INDEX 102-025	SHEET 1 of 1



NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L", "B", "X", and channelizing device spacing values.

2. Optionally, use "Signal Ahead" signs with symbols (W3-3) instead of "Signal Ahead" signs with text (W3-3A).

3. Use temporary raised rumble strips in accordance with the Plans. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing distance. See Index 102-000 for temporary raised rumble strip details.

4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing distances, may be omitted when the work zone will be in place for 24 hours or less.

5. For the maximum distance between temporary traffic signals, do not exceed the distance at which the temporary traffic signals can safely communicate. When the distance temporary traffic signals is greater than 0.25 miles, use a combination of a pilot vehicle and manually-controlled temporary traffic signals.

6. Monitor temporary trafic signals by having one or more workers present during operation. In the event of a temporary traffic signal failure, use flaggers to control traffic.

SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Lane Identification and Direction of Traffic
- Temporary Traffic Signal
- Work Zone Sign

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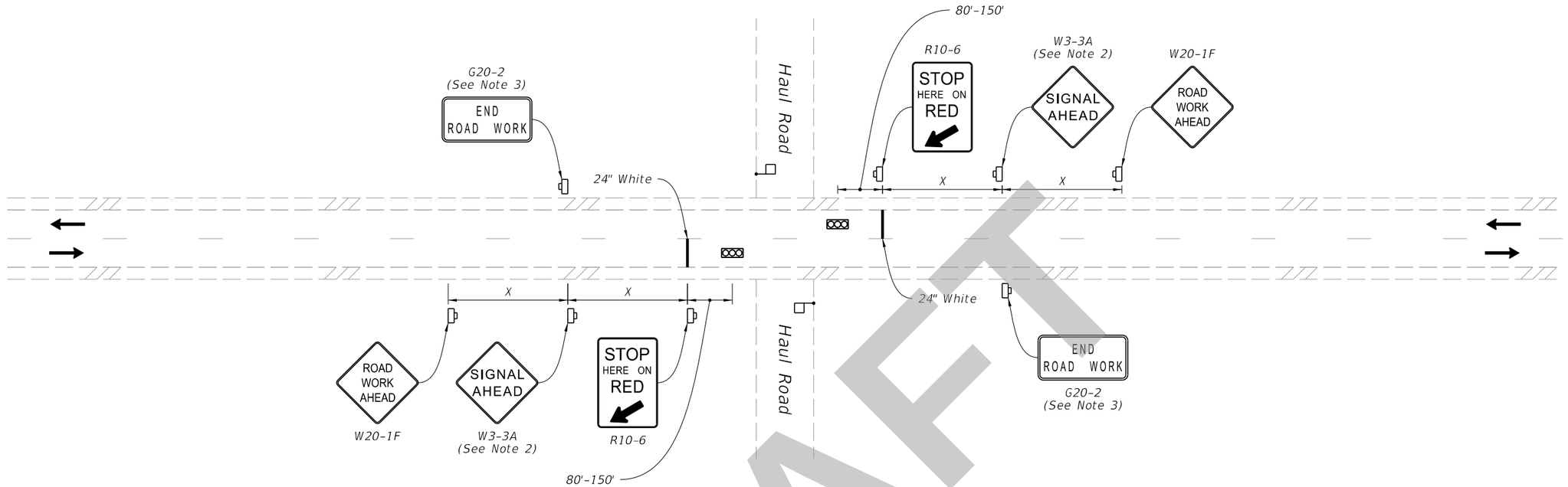
7/10/2019 10:31:27 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	TWO-LANE ROADWAY, LANE CLOSURE USING TEMPORARY TRAFFIC SIGNALS	INDEX 102-030	SHEET 1 of 1



(Two-Lane Roadway Shown, Multilane Roadway Similar)

NOTES:

1. *X = Work Zone Sign Spacing*
   See Index 102-000 for "X" values.

2. *Optionally, use "Signal Ahead" signs with symbols (W3-3) instead of "Signal Ahead" signs with text (W3-3A).*

3. *The "End Road Work" signs (G20-2) may be omitted when the work zone is in place for 24 hours or less.*

4. *Optionally, use temporary traffic signals for control of the haul road.*

SYMBOLS:

- *Lane Identification and Direction of Traffic*
- *Temporary Traffic Signal*
- *Work Zone Sign*
- *Flagger*

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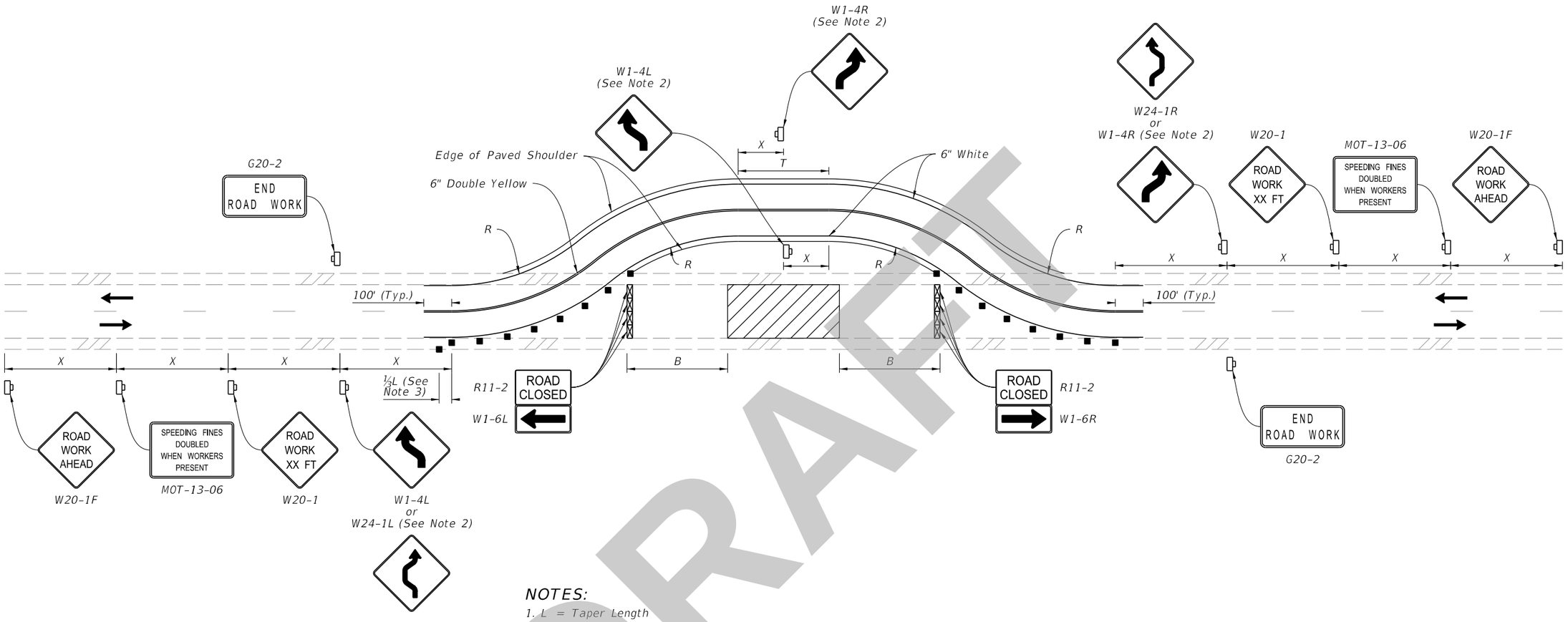
7/10/2019 10:31:28 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	HAUL ROAD CROSSING	INDEX 102-035	SHEET 1 of 1



NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   R = Radius of Curve
   See Index 102-000 for "L", "B", "X", and channelizing device spacing values. See Plans for "R" values.

2. If the tangent distance "T" is less than 600', then, for each direction, use a "Double Reverse Curve" sign (W24-1) instead of the first "Reverse Curve" sign (W1-4) and omit the second "Reverse Curve" sign.

3. If the temporary paved shoulder matches the width of the existing paved shoulder, omit taper and channelizing devices from the paved shoulder.

SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Type III Barricade

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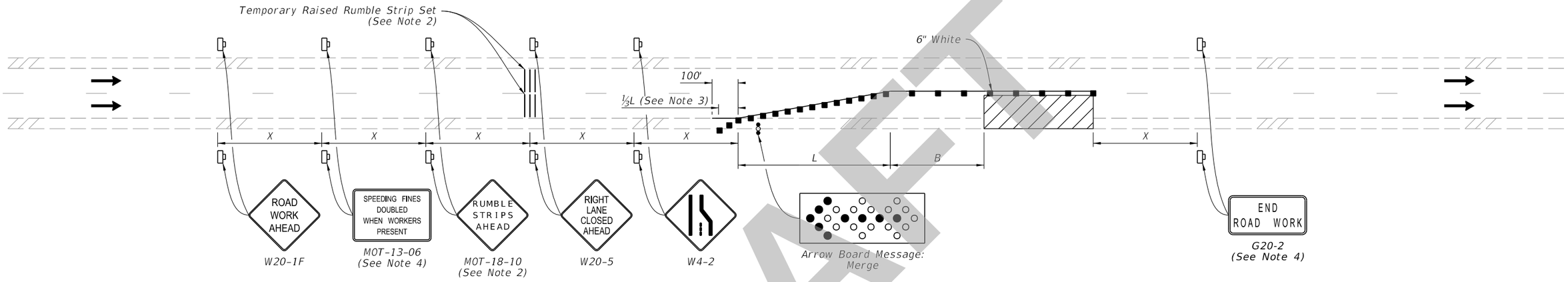
7/10/2019 10:31:29 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	TWO-LANE ROADWAY, TEMPORARY DIVERSION	INDEX 102-040	SHEET 1 of 1



SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Arrow Board

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L", "B", "X", and channelizing device spacing values.

2. Use temporary raised rumble strips in accordance with the Plans. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing distance. See Index 102-000 for temporary raised rumble strip details.

3. If the paved shoulder is less than 4' in width, omit the taper and channelizing devices from the paved shoulder.

4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing distances, may be omitted when the work zone will be in place for 24 hours or less.

5. Use inverted plan of the illustrations for work on left side of roadways.

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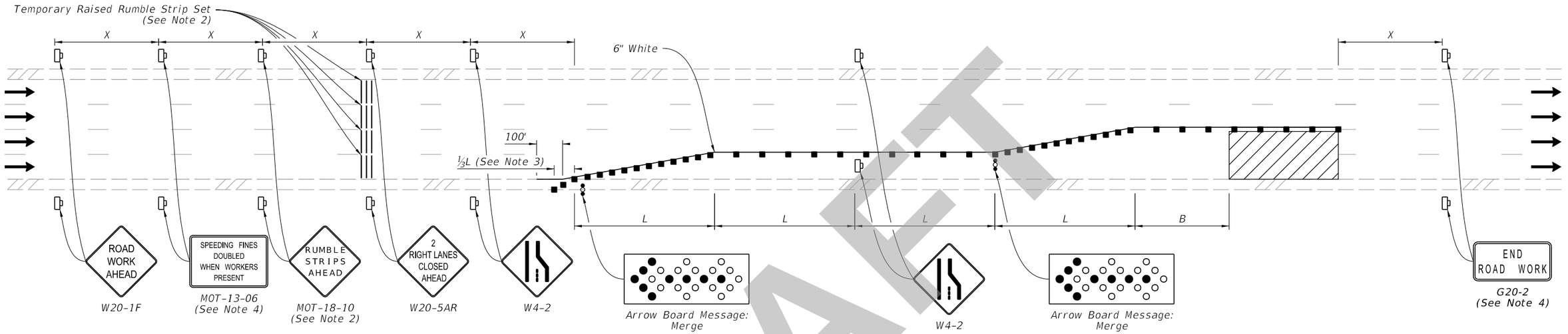
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2020-21 STANDARD PLANS	MULTILANE ROADWAY, SINGLE LANE CLOSURE	INDEX 102-045	SHEET 1 of 1



DOUBLE LANE CLOSURE

SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Arrow Board

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L", "B", "X", and channelizing device spacing values.

2. Use temporary raised rumble strips in accordance with the Plans. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing distance. See Index 102-000 for temporary raised rumble strip details.

3. If the paved shoulder is less than 4' in width, omit taper and channelizing devices from the paved shoulder.

4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing distances, may be omitted when the work zone condition will be in place for 24 hours or less.

5. Use inverted plan of the illustrations for work on left side of roadways.

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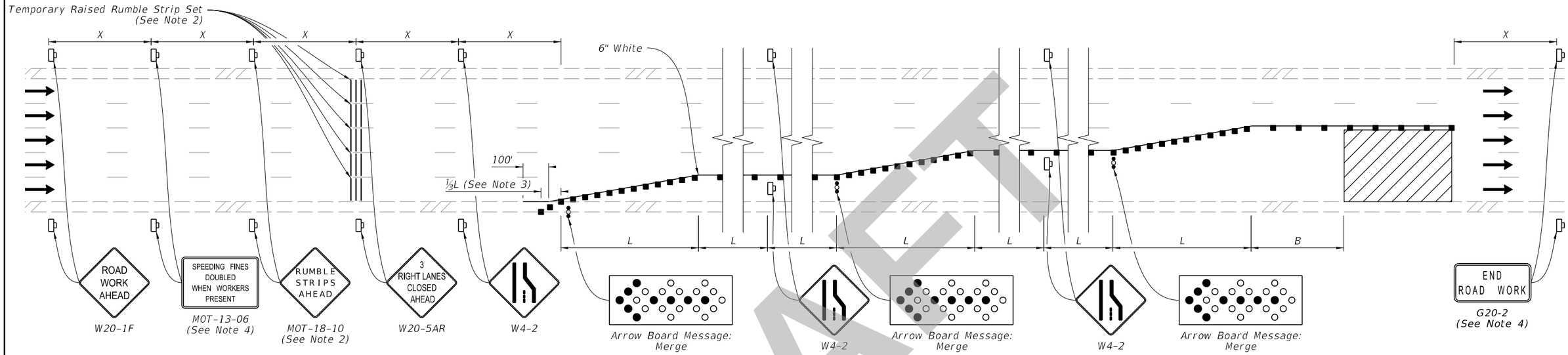
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	MULTILANE ROADWAY, MULTIPLE LANE CLOSURES	INDEX 102-050	SHEET 1 of 2



TRIPLE LANE CLOSURE

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SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Arrow Board

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L", "B", "X", and channelizing device spacing values.

2. Use temporary raised rumble strips in accordance with the Plans. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing distance. See Index 102-000 for temporary raised rumble strip details.

3. If the paved shoulder is less than 4' in width, omit taper and channelizing devices from the paved shoulder.

4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing distances, may be omitted when the work zone will be in place for 24 hours or less.

5. Use inverted plan of the illustrations for work on left of roadways.

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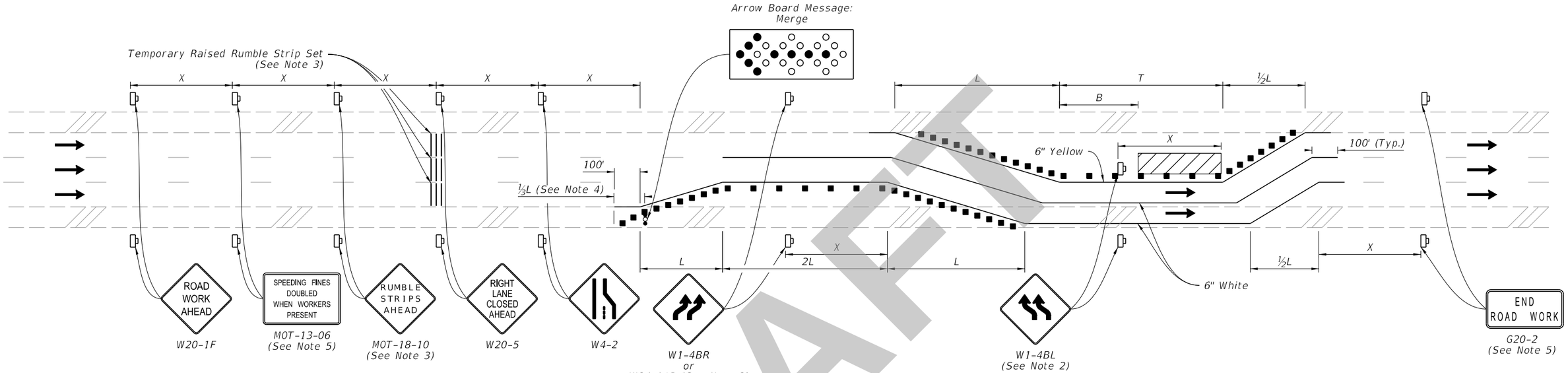
7/10/2019



NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L", "B", "X", and channelizing device spacing values.

2. If the tangent distance "T" is less than 600', then use "Double Reverse Curve" signs (W24-1A) instead of the first pair of "Reverse Curve" signs (W1-4B) and omit the second pair of "Reverse Curve" signs.

3. Use temporary raised rumble strips in accordance with the Plans. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing distance. See Index 102-000 for temporary raised rumble strip details.

4. If the paved shoulder is less than 4' in width, omit taper and channelizing devices from the paved shoulder.

5. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing distances, may be omitted when the work zone will be in place for 24 hours or less.

SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Arrow Board

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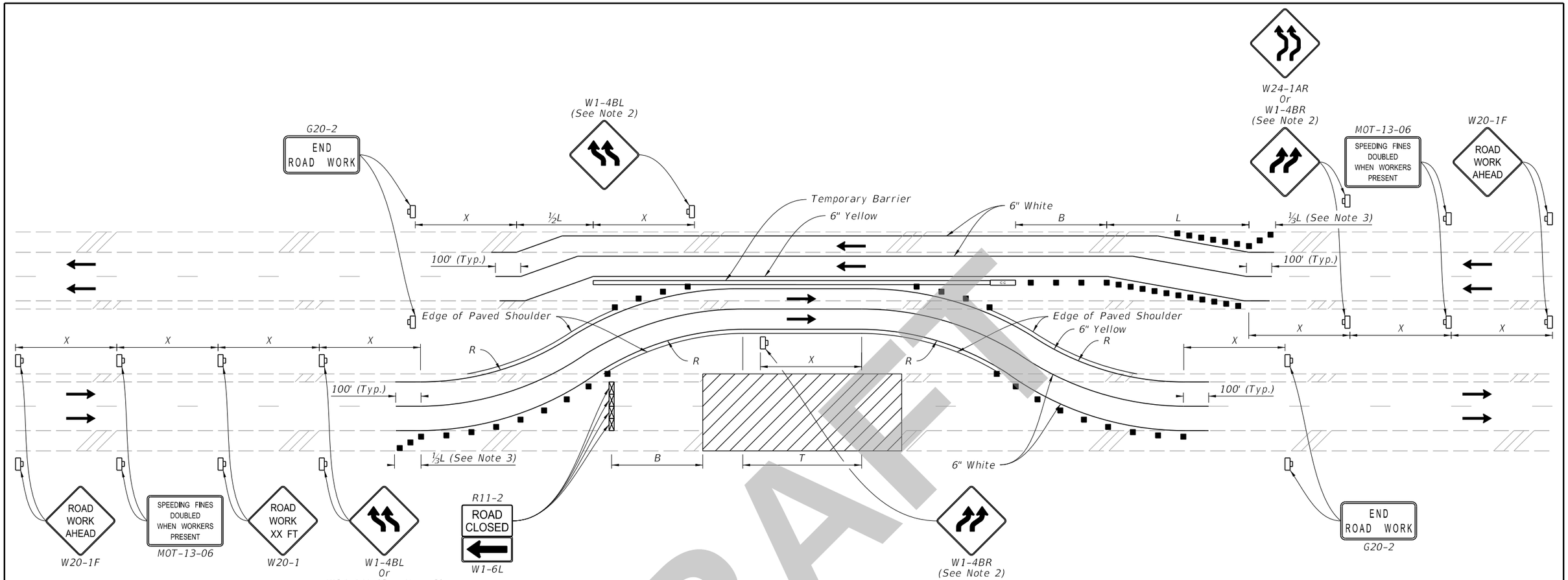
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURE WITH LANE SHIFT	INDEX 102-055	SHEET 1 of 1



TEMPORARY DIVERSION FOR ROADWAYS WITH WORK ZONE SPEED OF 50 MPH OR GREATER

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   R = Radius of Curve
   See Index 102-000 for "L", "B", "X", channelizing device spacing values. See Plans for "R" values.

2. If the tangent distance "T" is less than 600', then use "Double Reverse Curve" signs (W24-1A) instead of the first pair of "Reverse Curve" signs (W1-4B) and omit the second pair of "Reverse Curve" signs.

3. If the paved shoulder is less than 4' in width, omit the taper and channelizing devices shown on the paved shoulder.

SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Crash Cushion
- Type III Barricade

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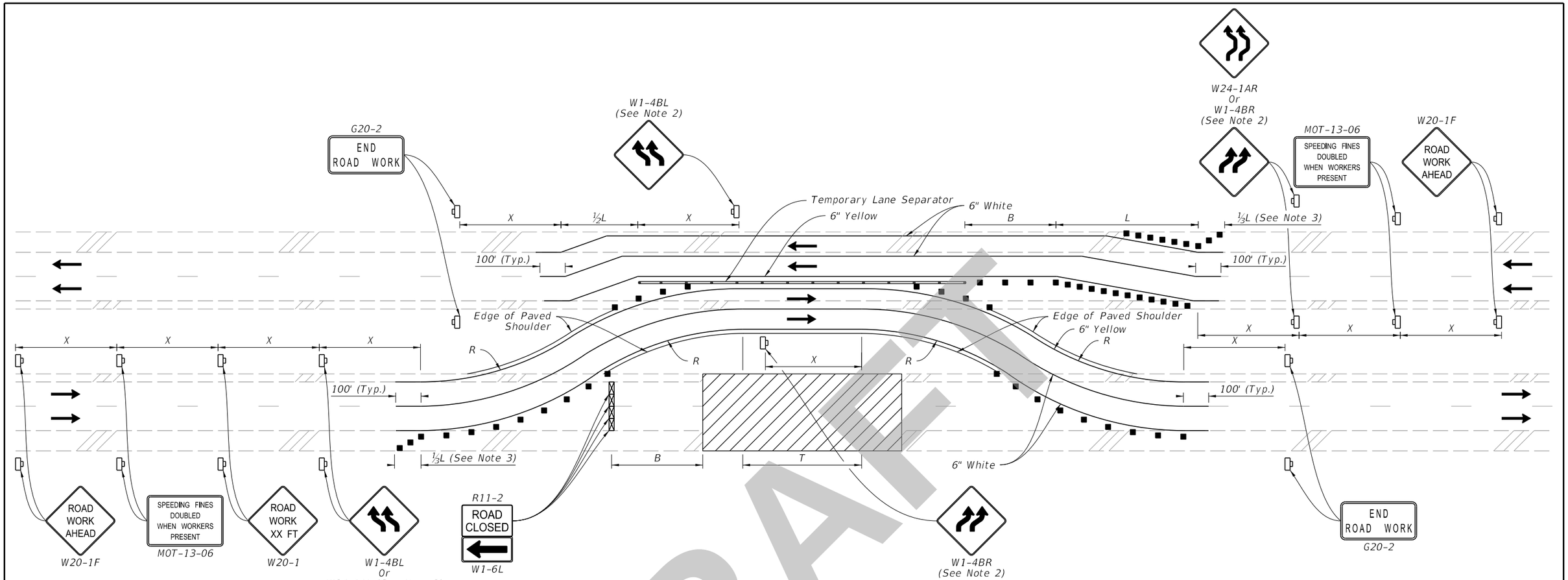
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	MULTILANE ROADWAY, TEMPORARY DIVERSION	INDEX 102-060	SHEET 1 of 2



TEMPORARY DIVERSION FOR ROADWAYS WITH WORK ZONE SPEED OF 45 MPH OR LESS

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   R = Radius of Curve
   See Index 102-000 for "L", "B", "X", channelizing device spacing values. See Plans for "R" values.

2. If the tangent distance "T" is less than 600', then use "Double Reverse Curve" signs (W24-1A) instead of the first pair of "Reverse Curve" signs (W1-4B) and omit the second pair of "Reverse Curve" signs.

3. If the paved shoulder is less than 4' in width, omit the taper and channelizing devices shown on the paved shoulder.

SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Type III Barricade

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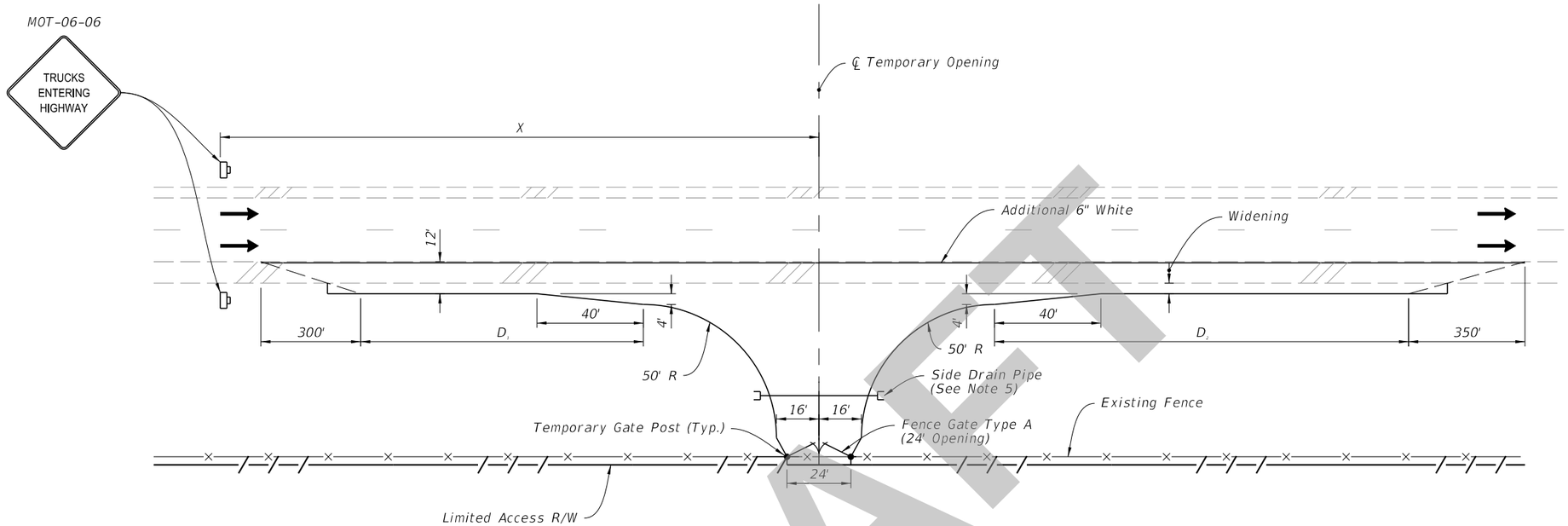
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	MULTILANE ROADWAY, TEMPORARY DIVERSION	INDEX 102-060	SHEET 2 of 2



LENGTH OF ACCESS LANES		
Grade	D_1 (feet)	D_2 (feet)
2% or less	590	1540
3 to 4% Upgrade	530	2310
3 to 4% Downgrade	710	925

SYMBOLS:

Work Zone Sign

Lane Identification and Direction of Traffic

NOTES:

1. X = Work Zone Sign Spacing
   See Index 102-000 for "X" value.
2. Locate temporary openings in areas having adequate sight distance.
3. Do not locate temporary openings within 1.5 miles of interchanges, nor within 2000 feet of the acceleration-deceleration lanes at rest areas, median openings, other access openings, or other highway service areas.
4. Do not remove existing guardrail or barrier for temporary openings.
5. Use mitered end sections for any end sections within the clear zone.
6. Match cross slope of existing shoulder for widening.
7. Provide 2' of unpaved shoulder outside of the widening.

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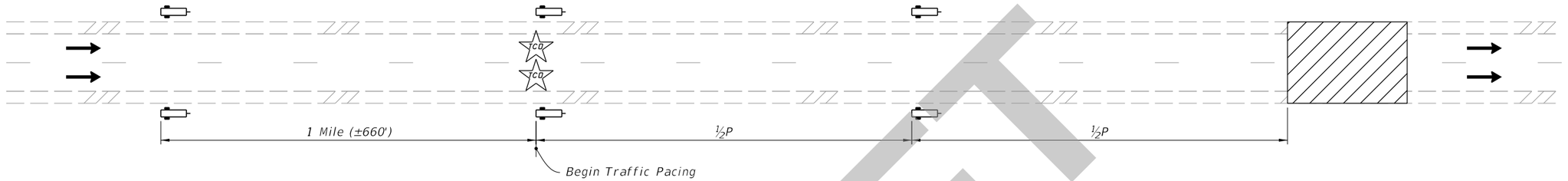
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	LIMITED ACCESS TEMPORARY OPENING	INDEX 102-065	SHEET 1 of 1



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TYPICAL PCMS DISPLAY:

During day of pacing operation:
- *Message 1: ROAD WORK TONIGHT*
- *Message 2: EXPECT PERIODIC DELAYS*

During pacing operation:
- *Message 1: SLOW TRAFFIC AHEAD*
- *Message 2: BE PREPARED TO STOP*

SYMBOLS:

- *Work Space*
- *Lane Identification and Direction of Traffic*
- *Portable Changeable Message Sign (PCMS)*
- *Traffic Control Officer*

NOTES:

1. *P = Traffic Pacing Length*
   For "P" value, see Traffic Pacing Length table or calculate using Formulas.
2. *See the Plans for traffic pacing restrictions.*
3. *Do not exceed work duration of 30 minutes or traffic pacing length of 10 miles.*
4. *Coordinate with the traffic control officer supervisor to provide the correct number of traffic control officers for each traffic pacing operation.*
5. *Ensure that the necessary equipment is properly positioned for the work before requesting that the traffic control officer supervisor initiate the traffic pacing operation,*
6. *If workers or equipment are within the traveled way during the traffic pacing operation, use a truck- or trailer-mounted attenuator with portable changeable message sign to protect the work.*
7. *Maintain communications with all police vehicles throughout the traffic pacing.*
8. *Where feasible, do not pace traffic past the last available existing egress until the work has been completed.*
9. *When more than one traffic pacing operation is required in a calendar day, allow sufficient time between pacing operations to permit traffic to return to normal speed and flow.*
10. *For work durations of less than five minutes (e.g, moving large vehicles across the roadway), portable changeable message signs and truck-mounted attenuators are not required. Use traffic pacing length values from the five minute column of the table.*

TRAFFIC PACING LENGTH "P"

Pacing Speed = 20 mph

Work Zone Speed (mph)	Work Duration (minutes)					
	5	10	15	20	25	30
70	2.3	4.7	7.0	9.3	–	–
65	2.4	4.8	7.2	9.6	–	–
60	2.5	5.0	7.5	10.0	–	–
55	2.6	5.2	7.9	–	–	–
50	2.8	5.6	8.3	–	–	–

Notes: (1) All lengths in the above table are in miles.
(2) For work durations with no values shown above, calculate length using a reduced pacing speed, but not less than 10 mph.

FORMULAS:

S_W = Work Zone Speed (mph)
S_p = Pacing Speed (mph)
t_W = Work Duration (minutes)
P = Traffic Pacing Length (miles)

$$P = \frac{t_W}{60} S_p \left(\frac{S_p}{S_W - S_p} + 1 \right)$$

$$P = P_C + P_W$$

P_C = distance paced vehicles must travel before the vehicles at regulatory speed have cleared the work zone

$$P_C = \left(\frac{\frac{t_W}{60} \times S_p^2}{S_W - S_p} \right)$$

P_W = distance paced vehicles travel while work is performed

$$P_W = \left(\frac{t_W}{60} \times S_p \right)$$

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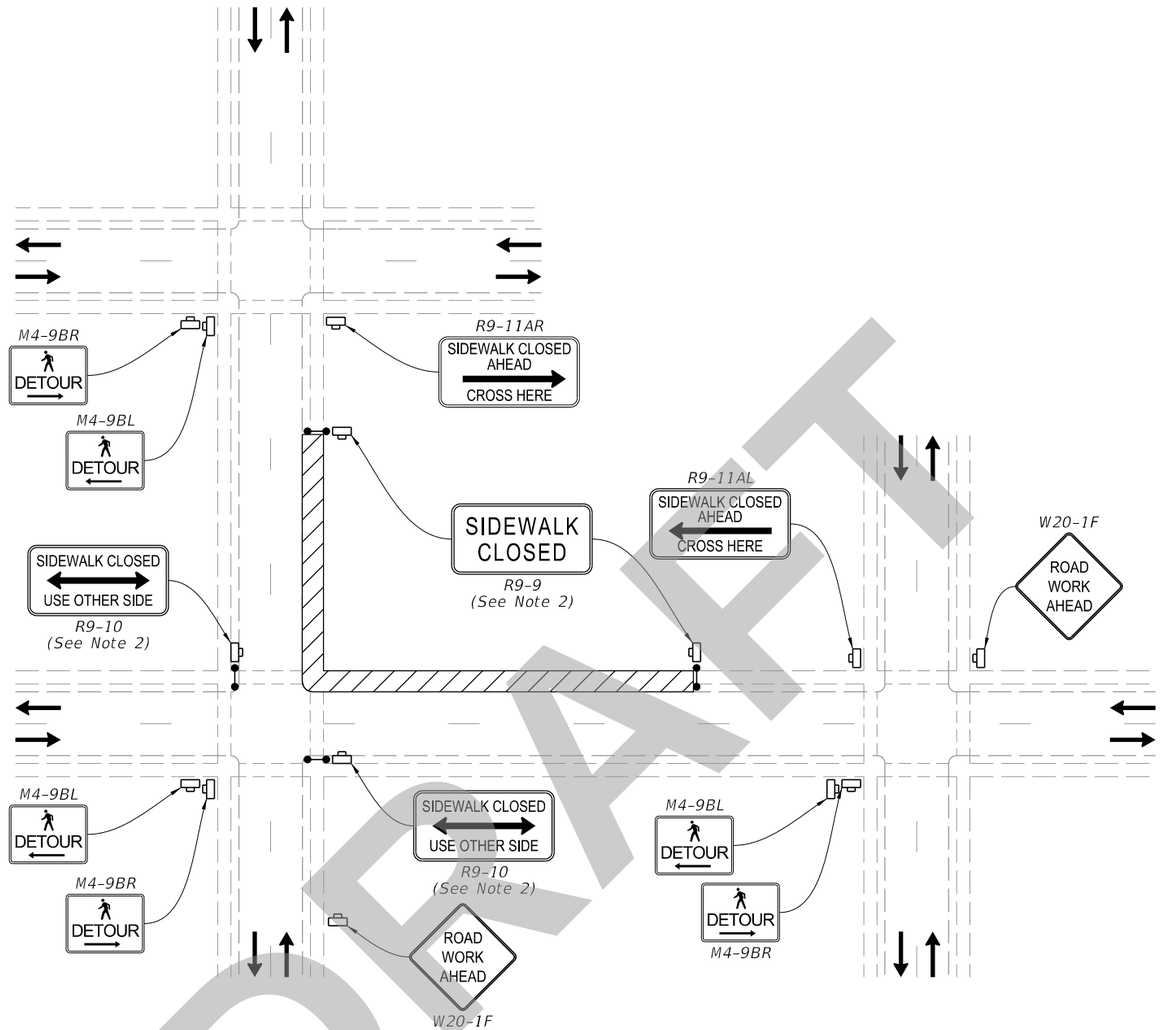
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	TRAFFIC PACING	INDEX 102-070	SHEET 1 of 1



PEDESTRIAN DETOUR

SYMBOLS:

- Work Space
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Pedestrian Longitudinal Channelizing Device (LCD)

NOTES:

1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
2. Place pedestrian LCDs across the full width of the closed sidewalk.
3. "Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.

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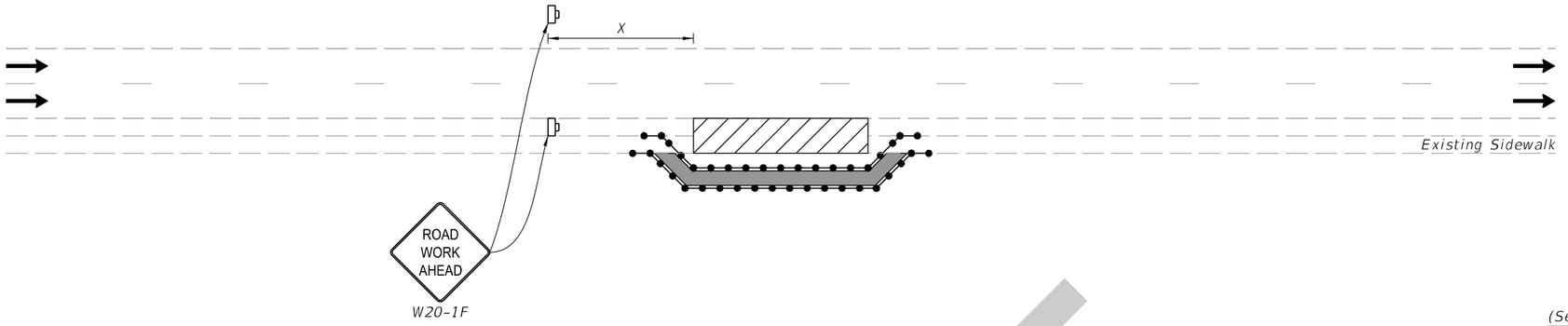
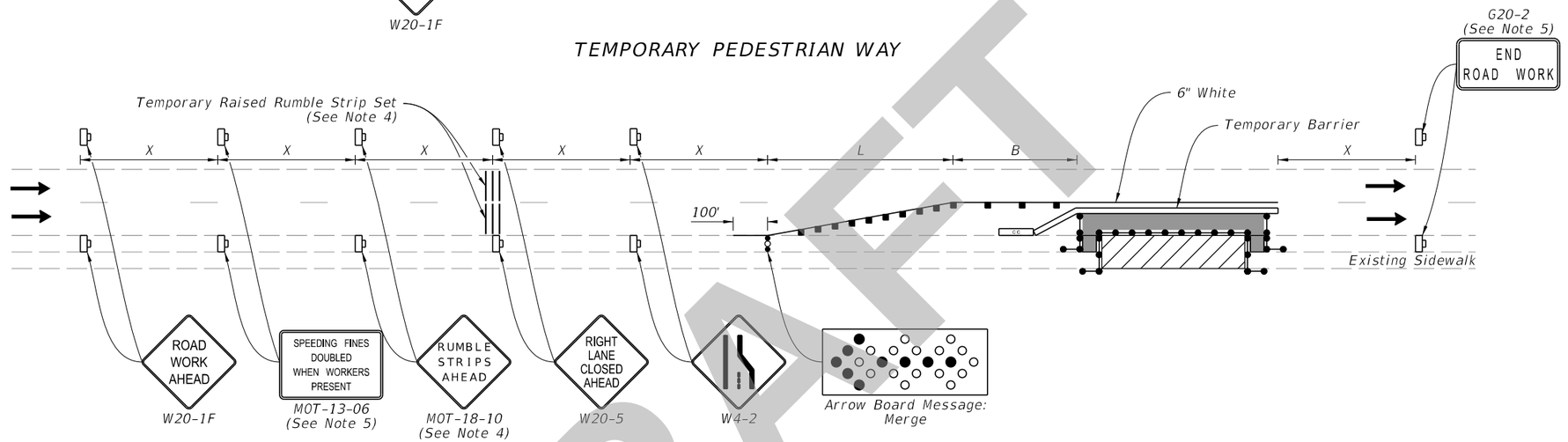
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	WORK ON THE SIDEWALK	INDEX 102-075	SHEET 1 of 2



TEMPORARY PEDESTRIAN WAY



TEMPORARY PEDESTRIAN WAY DIVERTING

TEMPORARY PEDESTRIAN WAY DIVERTING TRAFFIC INTO THE TRAVELED WAY
(Temporary Barrier Shown, Low Profile Barrier Similar)

SYMBOLS:

- Work Space
- Channelizing Device (See Index 102-000)
- Work Zone Sign
- Lane Identification and Direction of Traffic
- Arrow Board
- Crash Cushion
- Pedestrian Longitudinal Channelizing Device (LCD)
- Temporary Pedestrian Way

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-000 for "L", "B", "X", channelizing device spacing values.

2. Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.

3. When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.

4. Use temporary raised rumble strips in accordance with the Plans. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing distance. See Index 102-000 for temporary raised rumble strip details.

5. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing distances, may be omitted when the work zone will be in place for 24 hours or less.

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