



ENGINEERING AND PUBLIC WORKS DEPARTMENT
TRAFFIC DIVISION



GUIDE

May 2024

Table of Contents

1	Temporary Traffic Control PLAN (TTCP) Required Items	3
1.1	Basis of design:	3
1.2	General Plan Requirements:	3
2	PALM BEACH COUNTY GENERAL REQUIREMENTS	5
2.1	Barricades, Lights and Cones	5
2.2	Bike Lanes	5
2.3	Detours	5
2.4	Flag Person and Vests	6
2.5	Flashing Arrow Boards	6
2.6	Horizontal Curves	6
2.7	Pavement markings	7
2.8	Pedestrians	8
2.9	Road Closures	8
2.10	Schools	9
2.11	Side Streets and Driveways	9
2.12	Signs	9
2.13	Speed Reduction	9
2.14	Steel Plates	10
2.15	Tapers	10
2.16	Traffic Control Officer	10
2.17	Traffic Signals	10
2.18	Variable Message Signs	11
2.19	Work Area	11
2.20	Work Time and Hours	11
3	PALM BEACH COUNTY MOT PERMITTING POLICY	12
3.1	MOT Permit Application	12
3.2	MOT Permit Application Review Cycle	12
3.3	MOT Permit Approval	13
4	DESIGN EXAMPLES	14

1 Temporary Traffic Control PLAN (TTCP) Required Items

A Temporary Traffic Control Plan is a custom Maintenance of Traffic (MOT) plan for directing traffic safely around or through work sites. The typical TTCP is developed with the purpose of keeping motorist, pedestrians, construction workers, and property safe. The TTCP shall include protection at work sites from when work starts:

- While work is in progress,
- When operations have been halted (such as during the night),
- Until the time work is completed and the County has accepted the improvements.

TTCP are to be prepared and signed by the Work Site Traffic Supervisor (certified by the American Traffic Safety Services Association or FDOT approved Advanced Maintenance of Traffic course) or by a Professional Engineer.

1.1 Basis of design:

The TTCP shall be prepared based on the current version or edition of the following standards:

- 1.1.1 Florida Department of Transportation (FDOT) “Standard Specifications for Road and Bridge Construction”
- 1.1.2 “Manual on Uniform Traffic Control Devices for Streets and Highways” (MUTCD)
- 1.1.3 FDOT “Design Standards”, specifically Indices 102-100 thru 102-680
- 1.1.4 FDOT “Design Manual”
- 1.1.5 “Manual of Uniform Minimum Standards for Design, Construction and Maintenance of Streets and Highways” (Florida Greenbook)

1.2 General Plan Requirements:

The TTCP shall include the following work elements:

- 1.2.1 Work Area(s) – i.e. the work location and the required space for materials, equipment and workers.
- 1.2.2 Buffer spaces - work vehicle parking cannot be in the buffer.
- 1.2.3 Temporary striping – when MOT will be in place for more than 3 days, temporary striping shall be used.
- 1.2.4 Page and sheet numbers for plans that have more than one page.
- 1.2.5 Match lines for work that attaches to additional pages.
- 1.2.6 Speed limit of the road(s) impacted by the TTCP.
- 1.2.7 Street Names and/or Route Numbers
- 1.2.8 Dimensions for channelizing device spacing, buffer spaces, tapers, tangents, signs spacing.
- 1.2.9 Palm Beach County Project Number (if applicable)

- 1.2.10 Permit numbers – Prior to submitting a MOT plan for review a permit must be received vis-a-vi:
- i. Landscape (LA),
 - ii. Utility (UT), or
 - iii. Right-of-Way (RW)
- 1.2.11 A copy of the signer’s certification, contractor’s name, and a 24-hour phone number of the work site traffic supervisor shall be on the TTCP.
- 1.2.12 North arrow; drawn by; lane usage; type and location of all signs, lights, barricades, striping, barriers, and traffic signals; all side-streets; change-overs; sidewalks; Retro-reflective Pavement Markers (RPM); pavement markings; school zones; crosswalks; Palm Tran bus stop(s) and railroad crossing(s).
- 1.2.13 Sufficient space on the plan is to be supplied for the County approval stamp.
- 1.2.14 Scale - Plans shall be drawn to a defined or relative scale; dimensions shall be shown. Plans that are not drawn to scale must be drawn proportionately and include all areas that will be within the temporary traffic control including signalized and unsignalized intersections. Plans must be legible, easily read and include all lane usage and current geometrics.
- 1.2.15 The TCCP may be drawings or overlaid aerials.
- 1.2.16 Drawing or aerials are to be current to what is in the field.
- 1.2.17 Foliage or shadows on aerial views that obstruct geometrics and pavement markings may cause the plan to be returned.
- 1.2.18 Legend – All items such as cones, work areas, signs, arrow boards, etc. may need to be shown in the legend.

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2 PALM BEACH COUNTY GENERAL REQUIREMENTS

2.1 Barricades, Lights and Cones

- 2.1.1 All barricades shall be maintained daily.
- 2.1.2 All Type III barricades shall have one Type A flashing light on each barricade. When extremely hazardous conditions exist, two (2) Type B flashing lights shall be used. Extremely hazardous conditions shall be determined by Palm Beach County Traffic Division (PBCTED).
- 2.1.3 Type II barricades and barrier walls shall have one Type C steady burning light.
- 2.1.4 Type B Lights and 18" x 18" Orange Flags shall be placed on the first two warning signs in the series for signs that will be in place for more than 24 hours. These signs shall be post mounted.
- 2.1.5 Lights on barricades, barrier walls and drums shall be used as indicated in the MUTCD.
- 2.1.6 Cones restricted for use only when workers are present.
- 2.1.7 Barricades/drums with lights shall be placed around any construction hazards left unattended even if a TTCF is not required.

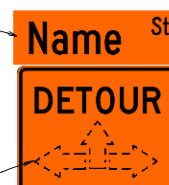
2.2 Bike Lanes

- 2.2.1 Bike lanes should be addressed per the FDOT indices. If there is a paved shoulder and BIKE LANE signs and/or BIKE LANE pavement markings are not present, a typical shoulder closure shall be used.

2.3 Detours

- 2.3.1 Traffic shall be detoured onto a road with a similar lane configuration and capacity (or better).
- 2.3.2 Traffic shall not be detoured across private property.
- 2.3.3 Detours on public access but privately maintained streets will require written approval prior to submitting for PBCTED approval.
- 2.3.4 Detours on FDOT or Municipal roads and streets will require permission from the maintaining agency. PBCTED approval is limited to PBC roads only.
- 2.3.5 Detours lasting more than 3 days shall have a street name above with 9" Upper Case & 6.75" Lower Case letters on a 12" sign blade. The letters shall be a Series B, or better, and be black on orange or white on green. Example:

9" Upper Case & 6.75"
Lower Case, Series "B"
Letters on a 12" Blade.
White on Green or Black
on Orange.



w/Directional
Arrow

2.4 Flag Person and Vests

- 2.4.1 The flagger shall be trained in the proper manner as set forth in the MUTCD and certified as per FDOT Specifications for Road and Bridge Construction Section 102. Each flagger shall have a certification card with them when flagging. Certification cards shall have the flagger's name, date of certification, and expiration date.
- 2.4.2 At the pre-construction meeting, the contractor may submit a list of certified flaggers. This list must include the same information as the flagger(s)' certification card(s).
- 2.4.3 If the person flagging traffic does not have the certification card, or the name is not on the list of approved flaggers, the flagger shall be replaced immediately with a certified flagger. There will be no lane closure until that time.
- 2.4.4 All construction personnel shall wear a retro-reflective orange or strong yellow/green vest/garment during daytime or nighttime operations when working within the Right-of-Way (Class 2 or 3 per MUTCD).
 - Ensure that these vest/garments be worn whenever workers are within the Right-of-Way. Workers operating machinery or equipment in which loose clothing could become entangled during operation are exempt from this requirement. Such exempt workers are required to wear orange shirts or jackets.
 - Replace faded vest/garments, as determined by the Palm Beach County Inspector.

2.5 Flashing Arrow Boards

- 2.5.1 Flashing arrow boards shall be used on any four (4) lane or larger roadway where traffic is being channelized or diverted, or as directed by the PBCTED. Type B or C Flashing arrow boards shall be used and shall conform with Section 6L of the MUTCD.
- 2.5.2 Flashing arrow boards shall be placed on the shoulder as per the FDOT Index. When this is not possible, it shall be placed in the closed lane at the trailing end of the merging taper. Flashing arrow boards shall not obstruct sidewalks or bike lanes.

2.6 Horizontal Curves

- 2.6.1 Supporting calculations shall be provided for all proposed horizontal curves and shall be provided by a Professional Engineer (signed and sealed).

2.7 Pavement markings

- 2.7.1 Temporary striping is required when lane shifts or closures are in place for more than 3 days. Conflicting striping shall be removed and new striping shall be installed per latest Palm Beach County T-P-21 or current edition, FDOT Index or MUTCD. Paint is not to be used for temporary striping. See section 4 below for examples.
- 2.7.2 All temporary pavement markings shall be done in a professional manner without weaves and/or bows. No over-painting shall be allowed.
- 2.7.3 Temporary RPM's shall be installed at an one (1) inch offset to lane lines, skips, gore or crosshatched area within the work zone. The spacing shall be forty (40) feet on tangent section and twenty (20) feet on transitions and curves (including edge lines). Damaged or missing RPM's shall be replaced on a daily basis. The RPM's shall have a maximum width of five (5) inches and a maximum height of three-quarters (0.75) inch. The minimum area of each reflective face shall be three and one-half (3.50) square inches. RPM's shall be bonded to the pavement or concrete with epoxy, alkyd thermoplastic or bituminous adhesive.
- 2.7.4 Temporary pavement markings shall be applied to the intermediate asphalt course, and shall consist of foil-backed tape, or paint meeting both State and PBCTED specifications.
- 2.7.5 Temporary pavement markings shall also be applied to the final asphalt course unless otherwise directed by PBCTED. All final course pavement markings shall consist of foil-backed tape. The temporary pavement markings shall be installed in accordance with the Design examples in section 4, below.
- 2.7.6 All temporary tape skip-line pavement markings shall be at least four (4) feet in length with a maximum gap of thirty-six (36) feet. A two (2) foot stripe with a maximum gap of eighteen (18) feet may be used for Roadways with severe curvature, or as directed by the County.
- 2.7.7 Black-out shall not be used to obliterate pavement markings. Existing pavement markings that conflict with temporary work zone delineation shall be removed by any method approved by the Engineer of Record/County.
- 2.7.8 If a school zone exists, it shall be maintained including crosswalks, school messages, and signs.
- 2.7.9 It shall be the contractor's responsibility to adjust existing signing, add new signing, and remove or add pavement marking on approaches to the project.
- 2.7.10 The last temporary pavement markings for the project's final condition shall be incidental to the MOT item. They shall be placed in the location of the future permanent pavement markings

2.8 Pedestrians

- 2.8.1 When pedestrian movement through or around a worksite is necessary, the contractor shall provide a separate, safe footpath without abrupt changes in grade or terrain.
 - 2.8.1.1 *If one (1) or two (2) pedestrian ways are provided (exist) prior to the start of a project, only one (1) has to be maintained.*
- 2.8.2 Places where pedestrians are judged especially vulnerable to be impacted by vehicles, all foot traffic should be separated and protected by temporary barriers.
- 2.8.3 Pedestrian detours are not to exceed 300 feet from the closure to a signalized or Palm Beach County approved alternative crossing location. The contractor is to provide a safe and reasonable alternate route including pedestrian detours, diversions, and flaggers to assist pedestrians around the work area when applicable.
- 2.8.4 Sidewalks within school zones/areas shall be maintained during morning start and afternoon dismissal times unless otherwise approved by the Engineer of Record/County. Otherwise, direct detours shall be provided such that students will not be diverted for more than 100 feet. Temporary guarded crossings provided by the contractor shall be utilized when needed.

2.9 Road Closures

- 2.9.1 The contractor shall not close a road or a portion of a road for more than 3 days without work occurring. Permits for road or lane closures, where no work has taken place, shall be revoked and a new permit required.
- 2.9.2 PBCTED will only approve a road closures as a last resort when no other viable options are available. This is the contractor/permittee's responsibility to assess the work and make every effort to complete the work without closing the road. Ease of construction or financial benefit for the road construction over the disruption or public safety are typically not a consideration.
- 2.9.3 Road closures also move traffic problems to other locations that may or may not be a part of the detour route.
- 2.9.4 Closing all lanes in a single direction and detouring traffic to an alternate route, shall be treated the same as a full road closure and follows same requirements.

2.10 Schools

- 2.10.1 Work near schools shall be scheduled such that impact to vehicular or pedestrian traffic is minimized.
- 2.10.2 School walking route - sidewalk closures with detours longer than 300 feet shall not be allowed. Sidewalk closures or longer detours are allowed during non-school times. Sidewalk diversions may be an option but must take place on property owned by the County or the permittee.
- 2.10.3 School bus stops – the contractor shall coordinate work or work times with school bus stops. If the bus stop needs to be relocated the contractor shall coordinate the relocation with Palm Beach County School District.

2.11 Side Streets and Driveways

- 2.11.1 All side streets and public access driveways within the work site shall be shown on the TTCP. 'STOP' signs shall be erected and temporary stop bars shall be installed and the existing 'STOP' sign shall be covered (bagged) or removed if the existing 'STOP' sign is more than 30 feet from the travel lane.
- 2.11.2 Access shall be maintained to all driveways, public or private. Any variation will need to be coordinated with the property owner and noted on the TTCP.
- 2.11.3 Side streets shall have orange street name signs.
- 2.11.4 Services for and to the property shall not be disrupted. Services include, but are not limited to, refuse collection, emergency services, and deliveries to mailbox, building or home.

2.12 Signs

- 2.12.1 Signs shall match the current MUTCD, Standard Highway Signs and Markings Book and FDOT specifications. The signs must be the correct color, shape and use the correct typeface for the specific sign.
- 2.12.2 All signs shall be post mounted when work operations exceed one day (twenty-four hours). *Note: This requirement is based on the project duration and not the quantity of the time workers are in working.*
- 2.12.3 Any time construction debris is left on site or the site is not in like or better condition than when work started, the site is considered a work area and shall have the appropriate post mounted signs and channelizing devices.

2.13 Speed Reduction

- 2.13.1 Any request for a temporary speed reduction must be justified by a traffic engineer and submitted in the form of a signed and sealed letter, accompanying the custom MOT plans.

2.14 Steel Plates

2.14.1 The 'STEEL PLATE AHEAD' (W8-24) sign(s) shall be used in conjunction with steel plates. Steel plates crossing lanes shall not exceed 20 feet in length and shall be avoided on approaches to traffic signals, stops or yields. Plates shall not take up the entire lane (i.e. avoid conditions where all vehicles' tires are on the plate).

2.15 Tapers

2.15.1 Tapers shall not to occur through intersections. Tapers shall be before or after the intersection.

2.16 Traffic Control Officer

2.16.1 Provide uniformed law enforcement officers, including marked law enforcement vehicles, to assist in controlling and directing traffic in the work zone, when the following types of work are necessary on projects:

2.16.1.1 Traffic control in a signalized intersection when signals are overridden.

2.16.1.2 When Standard Index No. 102-619 is used on an Interstate at night time and required by the TTCP.

2.16.1.3 When Standard Plans, Index 102-655 Traffic Pacing is called for in the TTCP or approved by PBCTED.

2.16.1.4 During the night time milling or paving, if the lane adjacent to the work area is open to traffic, the Traffic Control Officer shall be present with flashing lights, operating on their vehicle.

2.16.1.5 As required by the Engineer.

2.16.1.6 Provide uniformed laws enforcement officers, including marked law enforcement vehicles, to assist in controlling and directing traffic through the work zone, when authorized and/or directed by the Engineer, and for purposes not covered under the requirements of the TTCP.

2.17 Traffic Signals

2.17.1 A minimum of 72-hours' notice must be given to PBCTED (561-684-4030) prior to work requiring the realigning of traffic signals.

2.17.2 PBCTED will charge for traffic signals to be realigned to accommodate MOT.

2.17.3 Do not place TTC devices within six (6) feet of a traffic pole or within four (4) feet of a guy wire unless approved by and coordinated with PBCTED. Any damage due to contractor's failure to comply, shall result in the contractor being financial responsibility for the repairs to be made (by others).

2.18 Variable Message Signs

2.18.1 Portable Variable Message Signs (VMS) shall be used for traffic information only.

2.18.2 Variable message signs shall be on the closed road and the major side streets in each direction for the duration of the closure.

2.18.3 The VMS' shall be deployed:

2.18.3.1 Ten (10) business days before road closure and shall include the date(s) of the closure

2.18.3.2 Seven (7) business days before and seven (7) business days after major traffic shifts or traffic pattern changes.

2.19 Work Area

2.19.1 The work area(s) shall match the work locations within the associated permit/construction plans. The work area shall include the sufficient area to accommodate:

- The equipment,
- The work, and
- The personnel performing the work.

2.20 Work Time and Hours

2.20.1 PBCTED allows (exceptions shall be dependent on location):

- Lane closures from 9:00AM to 3:00PM or overnight from 7:00PM to 6:00AM.
- Double lane closures for night time work.

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3 PALM BEACH COUNTY MOT PERMITTING POLICY

3.1 MOT Permit Application

3.1.1 Custom MOT Plans are submitted to PBCTED for permit review via E-permitting (<https://www.pbcgov.org/ePermits/Main/Login.aspx>).

3.1.2 Two types of permits can be issued:

3.1.2.1 *Standard MOT permit – Apply for this permit after receiving a Palm Beach County Permit (i.e. LA – Landscape, RW - Right of Way or UT – Utility).*

3.1.2.2 *NON RW permit – This application is for work that does not occur within PBC right-of-way or is for maintenance of existing equipment.*

Note: Adding new equipment or any work that requires any disturbance to the soil, asphalt or concrete will require a Land development permit and a subsequent MOT permit once the Land Development permit conditions have been accepted.

3.2 MOT Permit Application Review Cycle

3.2.1 PBCTED attempts to complete MOT reviews within twenty (20) business days (see the Maintenance of Traffic Permitting Process Flow Chart, in the appendix).

3.2.1.1 *Items impacting PBCTED's ability to issue MOT permits:*

3.2.1.1.1 Previously permitted projects in same vicinity as the proposed scope - The permittee will be notified by PBCTED that a current project is scheduled or is underway. The permittee will be provided the contact info for the predecessor project. The permittee will need to submit written permission from the predecessor to work within the work zone of the permittee's project. The permittee is responsible for verifying the current work zone MOT and that the work can be performed within the existing TTCP or an additional compliment TTCP can be added to work in conjunction with the existing TTC.

3.2.1.1.2 Quality of the submittals received,

3.2.1.1.3 Complexity of the MOT Plan, and

3.2.1.1.4 Volume of projects in the review queue

Note: Most submittals have at least one round of comments, which means the PBCTED will have another 20 day review period. Adding required information, missing from a previous submittal, resets the review deadline.

3.3 MOT Permit Approval

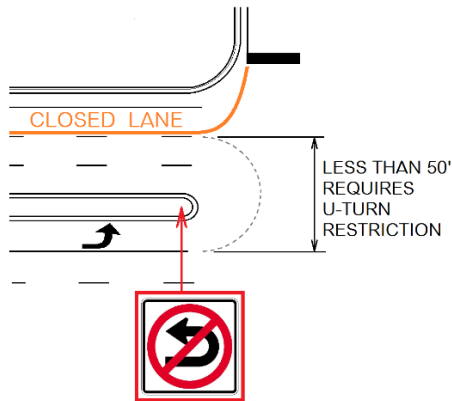
- 3.3.1 Once the MOT plan is approved, the permittee will receive an email which contains instructions on how to accept the Conditions of Approval online.
- 3.3.2 After permittee accepts the Conditions of Approval, PBCTD needs up to two (2) business days to process the permit. The PBCTD will send a second email to advise the Engineer of Record to contact Palm Beach County Construction Coordination.
 - 3.3.2.1 *Stamped approved plans and permit report are available via E-permitting.*
 - 3.3.2.2 *The earliest work can begin is forty-eight (48) hours after contacting Construction Coordination.*
 - 3.3.2.3 *The MOT must be in place within sixty (60) days of the Approval Date (see item 4.3.1), or the permit will expire and a new application will need to be submitted.*
 - 3.3.2.4 *One week prior to expiration, PBCTED will send an email notice of the pending MOT Permit expiration.*
 - 3.3.2.5 *A one-time sixty (60) day extension may be granted if the extension is requested prior to MOT Permit expiration.*
 - 3.3.2.6 *Modifications – permittee (or agent) must submit any modifications under an existing permit.*
 - 3.3.2.7 *The approved MOT must be available at all times on the construction site.*
 - 3.3.2.8 *In no case may the contractor begin work until the TTCP has been approved in writing by the PBCTED.*
 - 3.3.2.9 *Field modifications may be made with the approval of a representative of the PBCTED or Construction Coordination Divisions.*

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4 DESIGN EXAMPLES

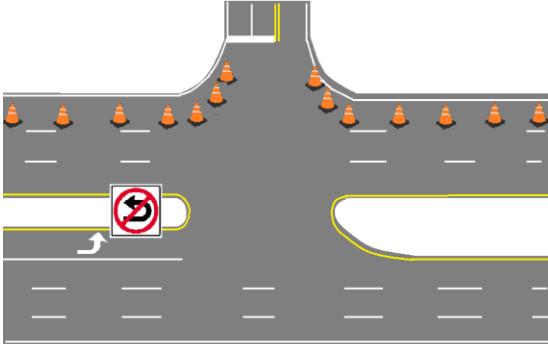
4.1 U-Turn Restrictions

- 4.1.1 U-turn movements are to be restricted if the distance between the right white edge line of the u-turning vehicle and the right side of the opposing travel lane is less than 50 feet. This condition may require a detour to the next available U-turn location.

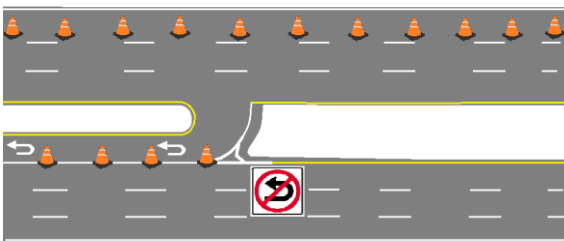


Examples of restricted U-Turns layout:

Example 1 – Left turn permitted, but restricting the U-Turn:

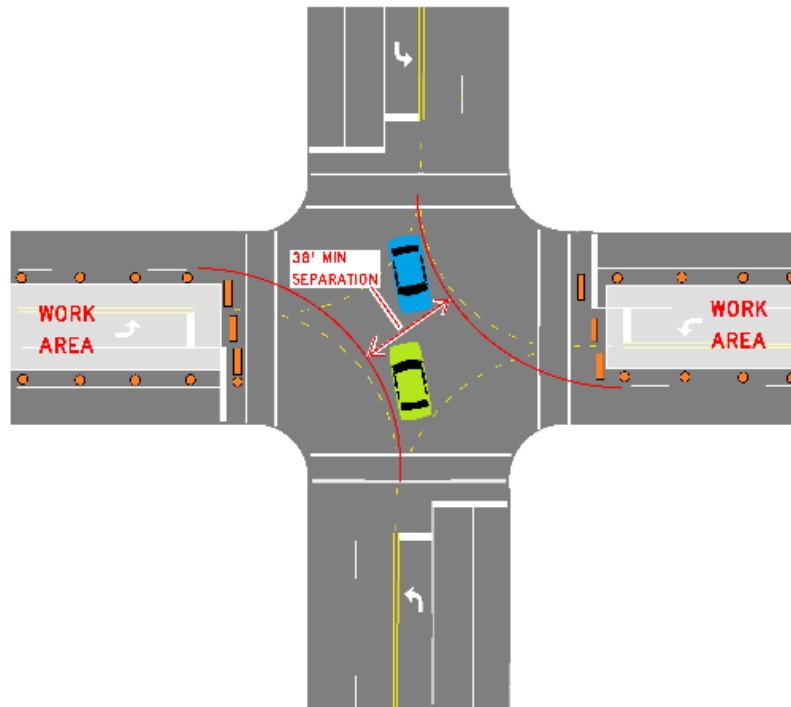


Example 2 – U-turn Lane closed:

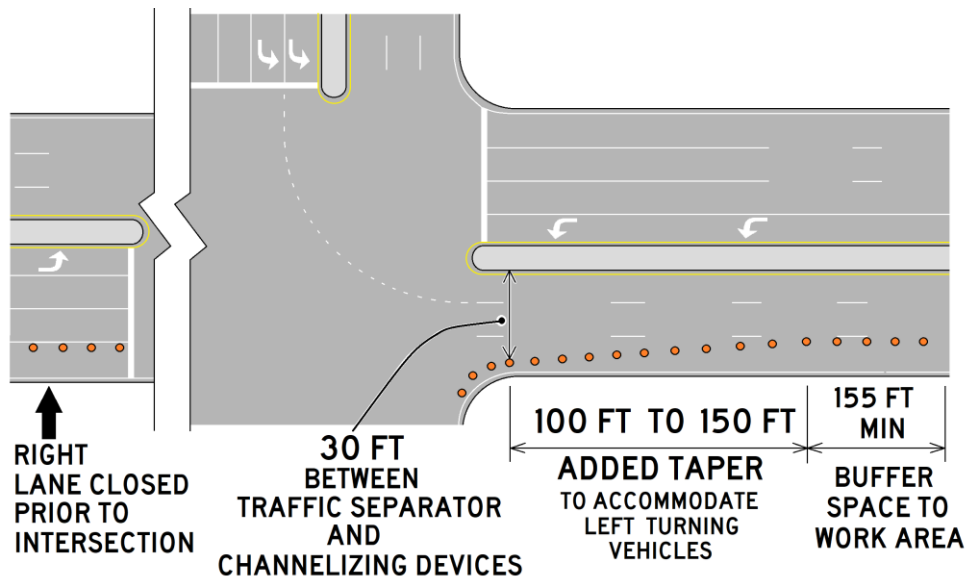


4.2 Traffic Pattern Conflicts

- 4.2.1 Due to lane shifts during construction, the travel path of vehicles may change and should be evaluated to not cause a conflict with other traffic movements. Typically, a left turn receiving lane shift can cause a conflict when modified. The problem may be resolved with adjusting the lane closures or may be addressed if the left turn signals are protected only and signal phasing adjustments are made with the maintaining agency. Traffic shifts may also cause pattern conflicts that will need to be addressed.

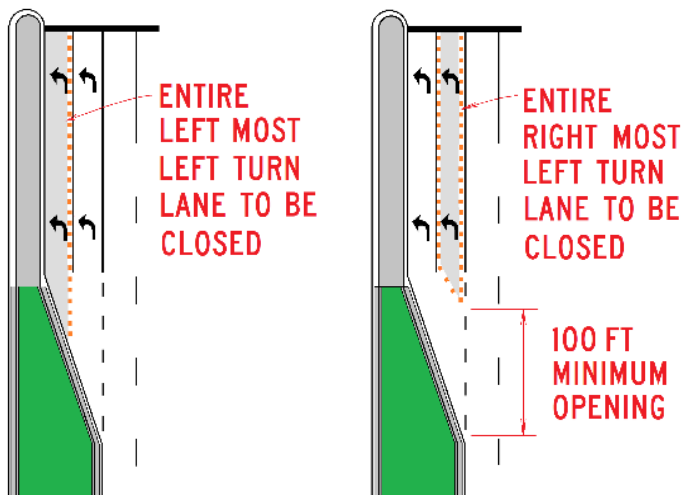


4.3 Dual Left-Turn Conflicts



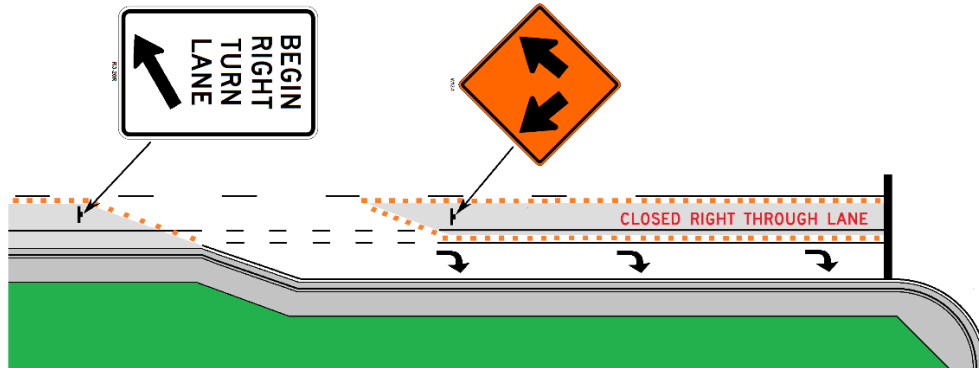
DUAL LEFT TURN ACCOMMODATION WITHIN TANGENT

4.4 Dual Left Closure - when accepting departure lane is closed



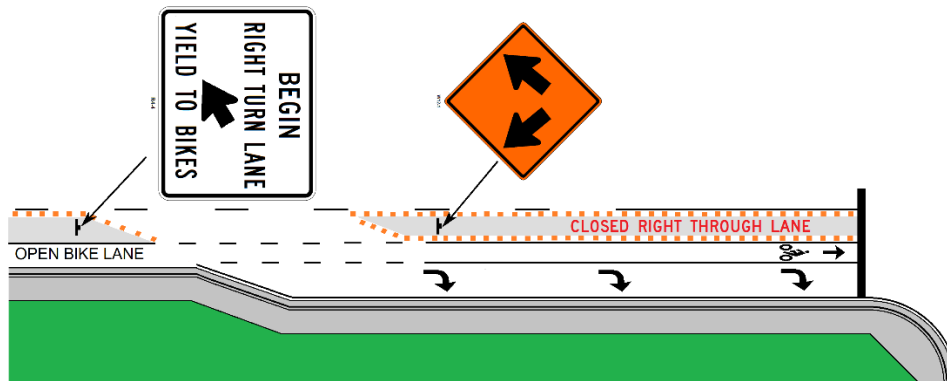
4.5 Right Through-Lane Closure – Right Turn Lane Access

- 4.5.1 'BEGIN RIGHT TURN LANE' sign shall be used on the leading edge with a DOUBLE ARROW (W12-1) sign to be used between the open through lane and open right turn lane.

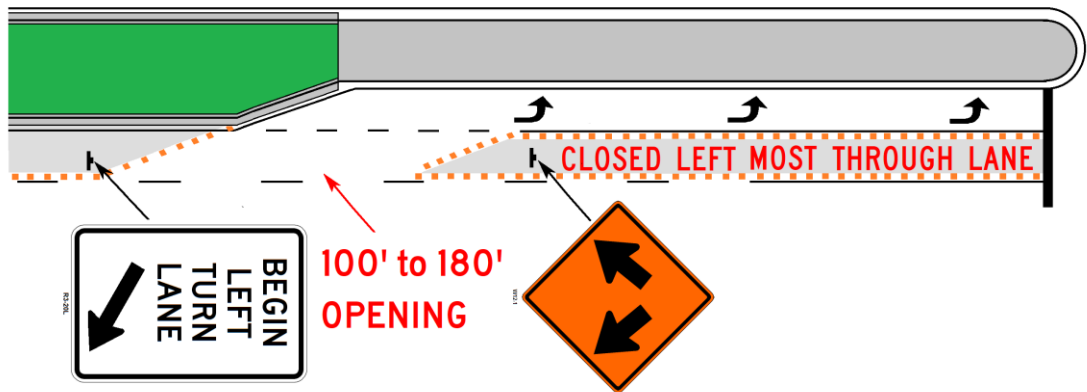


4.6 Bike Lane

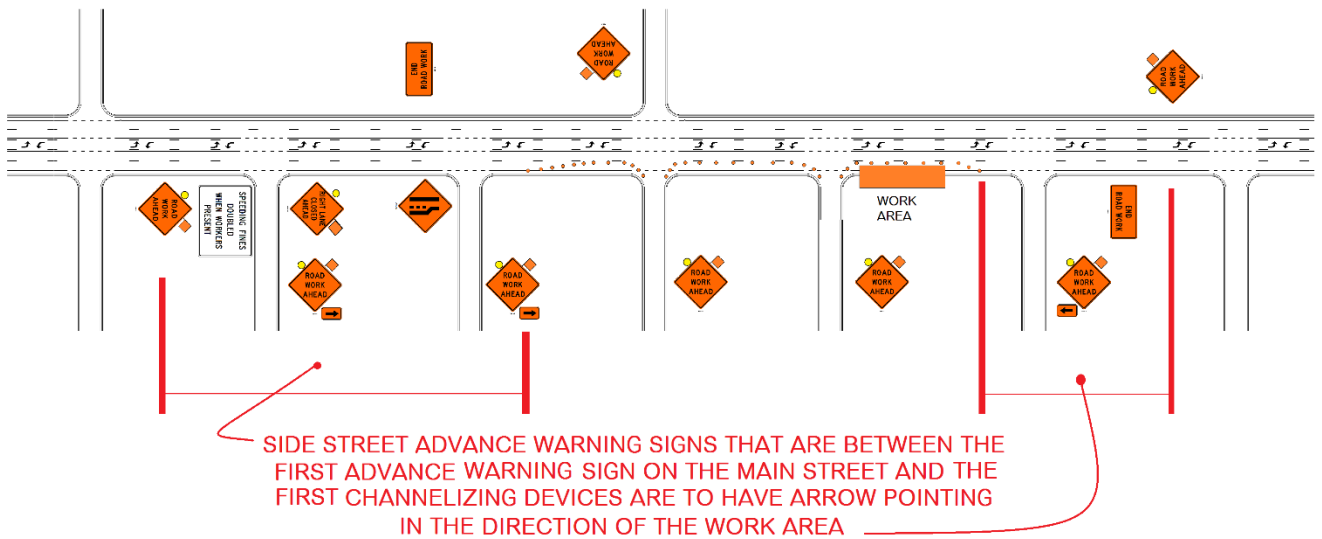
- 4.6.1 'BEGIN RIGHT TURN LANE – YIELD TO BIKES' sign at the leading edge with a DOUBLE ARROW (W12-1) sign between the open through lane and open right turn lane. *Note: the BEGIN RIGHT TURN LANE – YIELD TO BIKES sign does not to be installed if it exist in the field.*



4.7 Left Through-Lane Closure – Left Turn-Lane Access

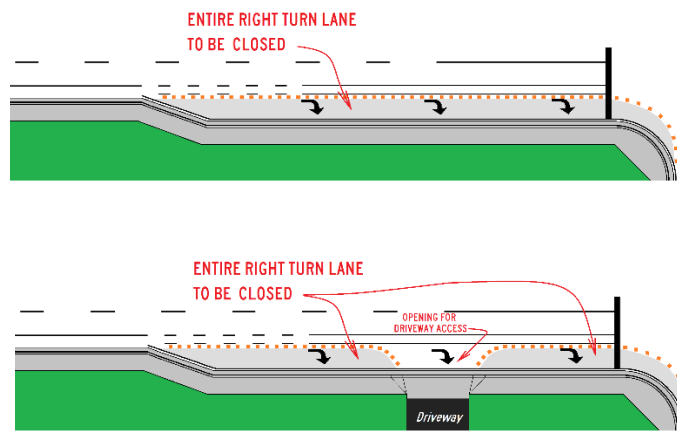


4.8 Side Street Warning Signs

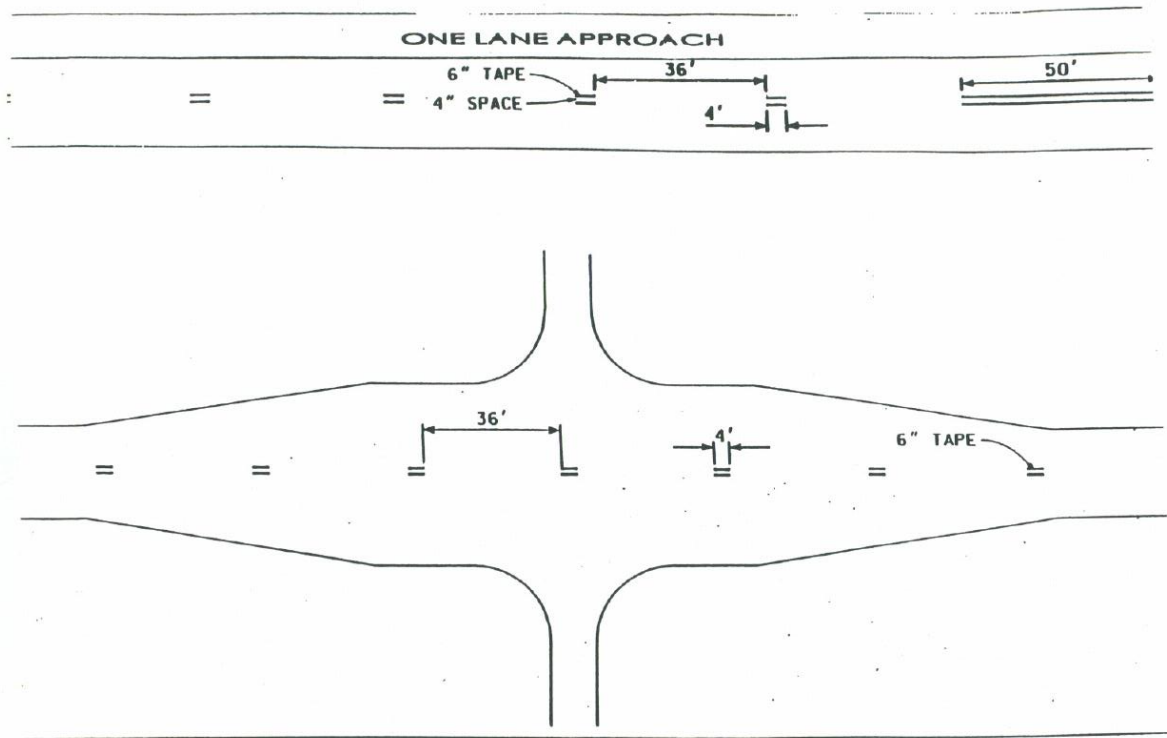


4.9 Auxiliary Lane Closures

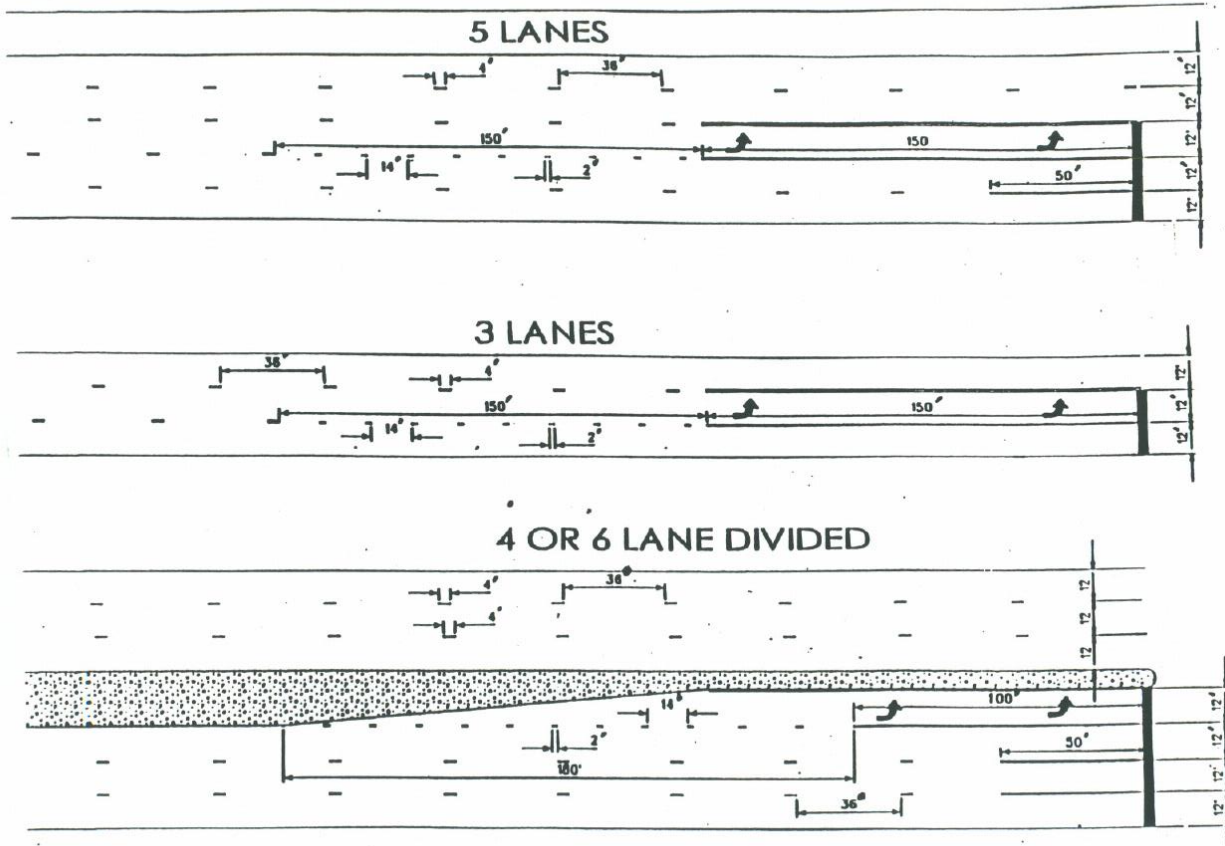
- 4.9.1 Auxiliary lanes closures are reviewed on site specific cases. Auxiliary lane closures will need to take into consideration for the site they access (Schools, Hospitals, Shopping Centers, Businesses Residential Neighborhoods or developments.) Long term closures may not be permitted depending on the site access or detour routes that may be required.
- 4.9.2 If it is just the auxiliary lane closure a 'ROAD WORK AHEAD' sign and a 'RIGHT/LEFT SHOULDER CLOSED' when the corresponding lane is closed shall proceed the lane closure.
- 4.9.3 When closing a left turn or U-turn auxiliary lane, 'NO LEFT TURN' or 'NO U TURN' sign shall be used and should include a detour to the next available U-turn. Please note the intent is the U-turn should be at a reasonable distance.



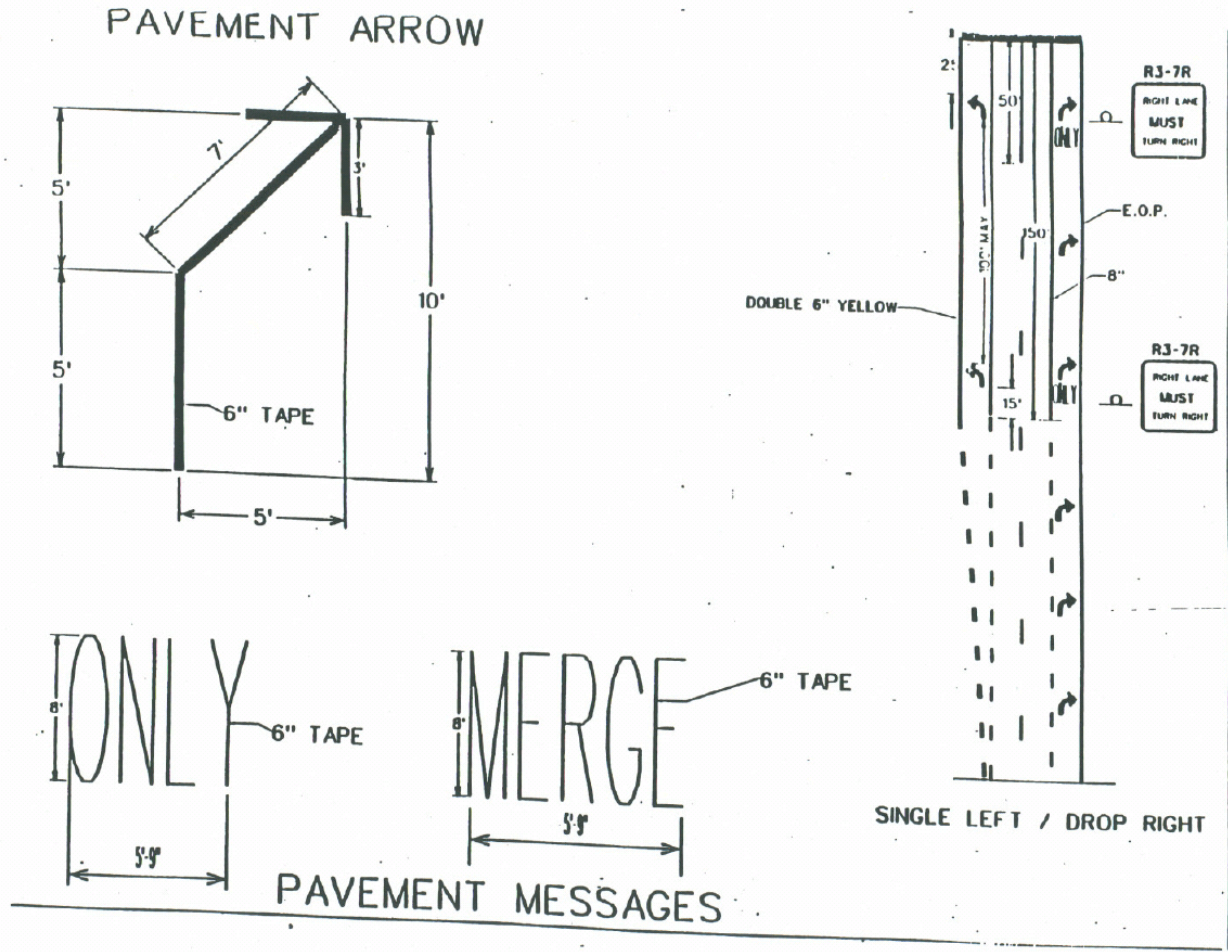
4.10 Temporary Pavement Markings



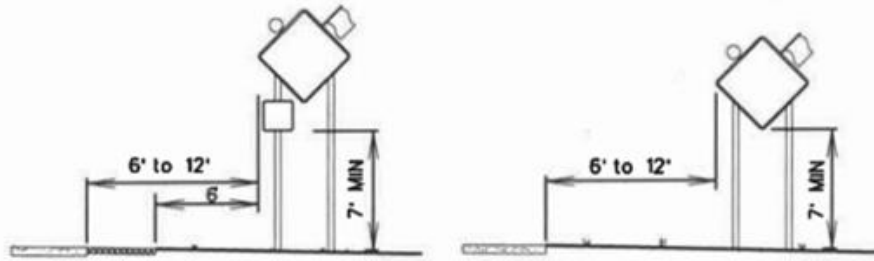
4.11 Temporary Pavement Markings for three or more lanes:



4.12 Temporary 'Merge' or 'Only' pavement markings:



4.13 Signing for long term stationary projects



- 1.) If a separator is to be signed it shall be a minimum of 6 feet wide. The signs shall be erected in such a way that they also conform with the 7 foot minimum.
- 2.) Other types of operation may be able to use the standard tri-pod or FDOT approved portable traffic control device as long as there is a minimum of 1 foot from the bottom of the sign to the ground.

4.14 Pavement Markings for long term stationary projects

