

A long-exposure photograph of a city street at night. The image is filled with vibrant, multi-colored light trails from moving vehicles, creating a sense of motion and energy. The background shows blurred city buildings and streetlights, with a dark sky. The overall composition is dynamic and visually striking.

MAINTENANCE OF TRAFFIC



OUTLINE

- **Coordination**
- **Notifications**
- **Subcontractors and Delaware guidelines**
- **Considerations for MOT providers**
- **Frequent errors**
- **Pedestrian issues**
- **Questions**





COORDINATION

- **Prior to Utility Permit Submission**
 - If there is a question about MOT contact the utility section and traffic safety.
- **Prior to Capital/Advanced Relocations**
 - These will have a set of approved MOT plans, any changes or modifications that need to happen can be coordinated with the traffic safety office & construction staff.
 - These projects will be subject to the same time and traffic restrictions as the main project. These need to be referenced before work begins.
- **Adjacent project**
 - Any road work, construction & MOT working within the same area will have to be coordinated. This will insure there is not overlap, conflict or issue with DEMUTCD compliance.



- **Traffic Safety Personal**

- **North District:**

- **Jimmy Maust – 302-222-5997**

- **Canal District:**

- **Curtis Davis – 302-358-0376**

- **Central District:**

- **Bobby Johnson – 302-502-1514**

- **South District:**

- **Dan Thompson – 302-300-6639**

NOTIFICATION

- **Any Work within the state ROW**

- TMC notification on daily activities when they are set in place, and when they are removed. 302-659-4600
- Utility sections Public Works / Capital and their inspection staff.





SUBCONTRACTOR ISSUES

- Out of state sub contractors are not familiar with Delaware specific requirements.
 - DEMUTCD
 - Contract guidelines
 - Time restrictions
- Field issue resolution
 - Who is the point of contact
 - Pass the blame
 - The correct person that can make the change.





CONSIDERATIONS FOR MOT SUBCONTRACTORS

- **Information exchange**
 - Let the MOT Sub know of the operation and the needs.
 - Will the work move or change the mot requirements
 - Timing needed for the work in the field.
- **Responsibility**
 - It's ultimately the utility that is doing the works responsibility to ensure that the MOT is set up and maintained correctly.



FREQUENTLY SEEN ERRORS

- Work zone coordination.
 - Overlapping signage is an ongoing issues.
 - Smallest work zone on the road, or able to be avoided with communication?





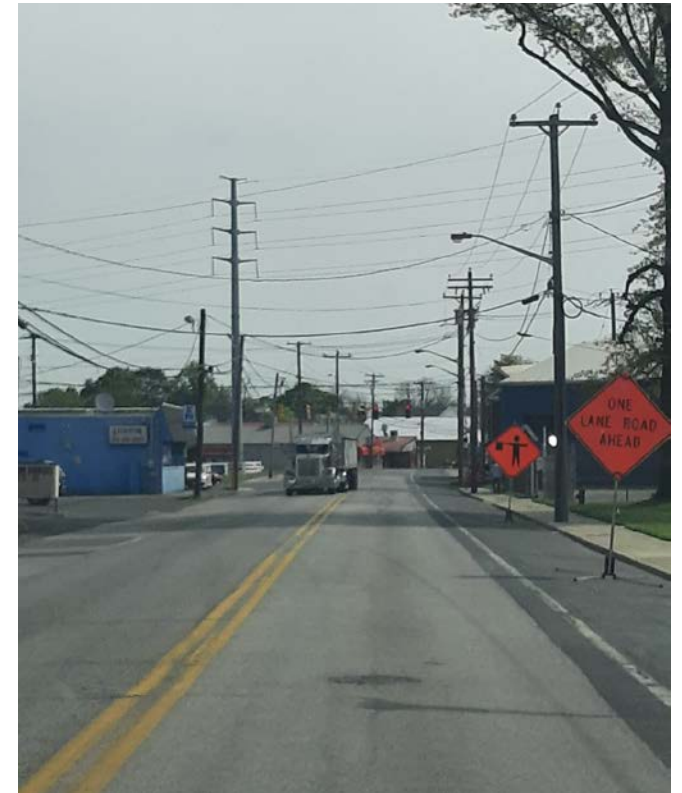
FREQUENTLY SEEN ERRORS

- **Flaggers**
 - Not being certified in Delaware.
 - Some states follow just the federal standard, we require flaggers certified in Delaware through an approved program such as ATSSA



FREQUENTLY SEEN ERRORS

- Signage
 - Incorrect height, 5' from the bottom of the sign to the top of the road surface.
 - Incorrect spacing for the roadway or typical application.
 - Being stored within the right of way while not in use.





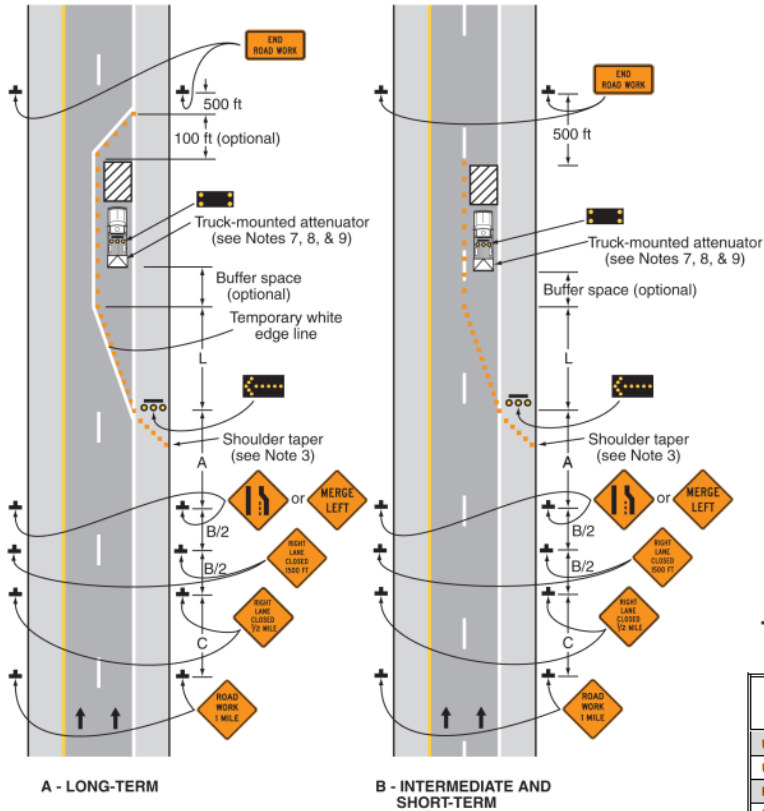
FREQUENTLY SEEN ERRORS

- **Devices**
 - **Damaged, dirty and/or non-compliant**
 - We follow ATSSA quality guidelines
 - **Incorrect spacing between devices**
 - Based on the speed limit of the roadway
 - **Incorrect taper lengths and spacing**
 - Based on the type of set up shift/closure, the roadway speed and the width of the shifted area.



TYPICAL APPLICATION & CALCULATIONS

Figure 6H-33. Stationary Lane Closure on a Multi-Lane, Divided Highway (TA-33)
(Delaware Revision)



Typical Application 33

Notes: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

The distance between the advance warning signs and the sign legends should be based on the interstate/expressway/freeway criteria in Table 6H-3 unless site specific constraints require a reduced sign spacing.

Table 6C-3. Taper Length Criteria for Temporary Traffic Control
(Delaware Revision)

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	0.5 L to L*
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6C-4 to calculate L
* A shifting taper length of L is preferred on state-maintained roads

Table 6C-4. Formulas for Determining Taper Length
(Delaware Revision)

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
More than 40 mph	$L = WS$

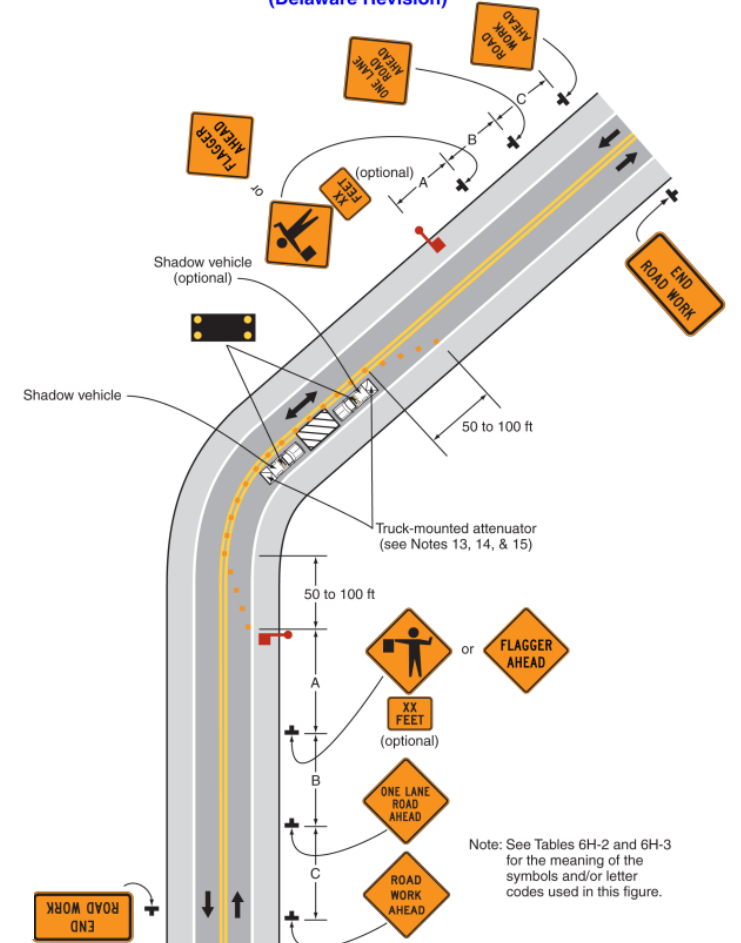
Where:
L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing
(Delaware Revision)

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Interstate / Expressway / Freeway	1,000 feet	1,640 feet	2,640 feet

* 40 mph or less is "low speed" and over 40 mph is "high speed" on state-maintained roadways.
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-6. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is farthest upstream from the TTC zone.)

Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)
(Delaware Revision)

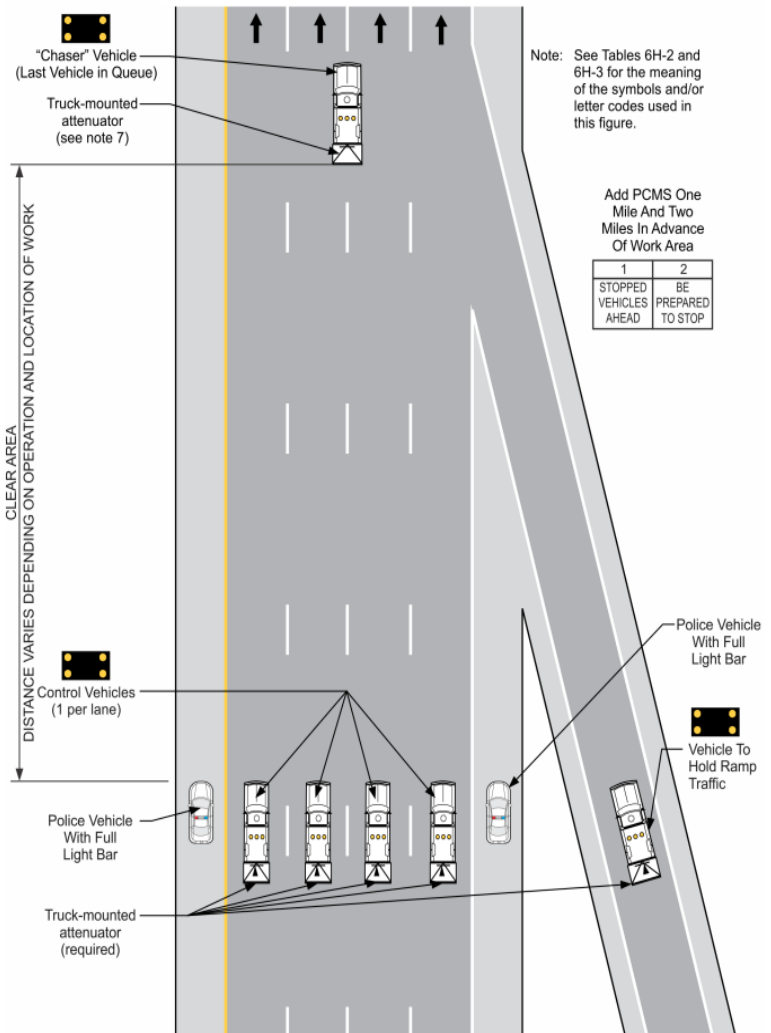


Typical Application 10

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.



Figure 6H-35H. Rolling Road Blocks on a Limited Access Multi-Lane, Divided Highway (TA-35H)
 (Delaware Revision)



Revision 3, May 2018

ROLLING ROADBLOCK

- Special cases where all lanes need to be stopped temporarily.
 - Mostly seen on aerial crossings over major roadway
 - These need to be pre-approved and they need to be coordinated with traffic safety.



PEDESTRIAN ISSUES

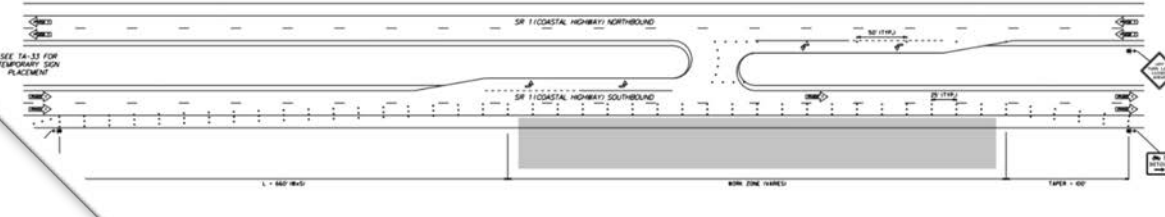
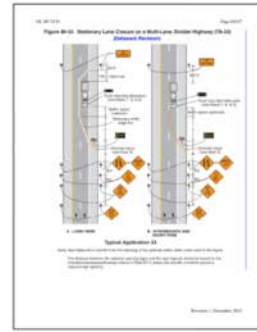

- Pedestrians are treated the same way as a vehicle. If there is a facility on site, then it needs to be maintained.
 - Its important to know the area you're working in; this can become tricky.
 - Pedestrian detours can be used
 - If they are taken away from the typical sidewalk, approved materials and special devices may be required to create a path.
 - Pedestrian flagging can be utilized if needed, this has worked well in the past.



SPECIFIC MOT FOR PEDESTRIANS/BIKES

GENERAL MOT NOTES:

1. MAINTENANCE OF TRAFFIC DURING LANE CLOSURES AND LANE SHIFTS SHALL CONFORM TO TYPICAL APPLICATIONS SA, AA, AA, AA AND 35H OF THE DELAWARE MUTCD.
2. A TYPE A TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE REQUIRED ON THIS PROJECT AS DIRECTED BY THE ENGINEER. THE ROLL AHEAD DISTANCE SHALL BE AS PER THE MANUFACTURER'S SPECIFICATIONS. THE TMA SHALL CONFORM TO THE REQUIREMENTS OF SECTION 6F OF THE DELAWARE MUTCD.
3. ACCEPTABLE MATERIALS FOR TEMPORARY PEDESTRIAN PATHS SHALL INCLUDE CONCRETE, HOT-MIX, COMPACTED MILLINGS OR PLYWOOD WALKWAY STRUCTURE. PLYWOOD WALKWAY STRUCTURES SHALL ALSO INCLUDE DETECTABLE CODING AND MARKINGS IN ACCORDANCE WITH ADA GUIDELINES AND THE DELAWARE MUTCD. TEMPORARY PEDESTRIAN PATHS SHALL BE INCIDENTAL TO THE ROADWAY UNLESS OTHERWISE SPECIFIED IN THE PLANS. STONE OR GRADED ADJACENT SIDE COURSE SHALL NOT BE USED FOR TEMPORARY PEDESTRIAN PATHS.
4. A PORTABLE VARIABLE MESSAGE SIGN (PVMS) SHALL BE PLACED ALONG SOUTHBOUND US 1 AT LEAST TEN (10) DAYS PRIOR TO ESTABLISHING THE WORK ZONE. THE EXACT MESSAGE(S) FOR THE PVMS SHALL BE DIRECTED BY THE TRAFFIC SAFETY SECTION.
5. THE CONTRACTOR SHALL PROVIDE TWO TRAFFIC OFFICERS FOR ANY ROLLING ROAD BLOCK OPERATIONS IN ACCORDANCE WITH TA-35H.
6. THE CONTRACTOR SHALL PROVIDE ONE TRAFFIC OFFICER FOR ANY OPERATION WHERE AN EXISTING SIGNALIZED INTERSECTION IS PLACED IN FLASH-MODE. THE TRAFFIC OFFICER IS THE ONLY INDIVIDUAL THAT CAN PLACE A TRAFFIC SIGNAL IN FLASH-MODE AND THE TRAFFIC OFFICER MUST STAY ON LOCATION UNTIL THE SIGNAL IS PLACED BACK IN STOP-AND-GO OPERATION IN ACCORDANCE WITH DELDOT'S TEMPORARY TRAFFIC CONTROL, ROLLING INTERSECTIONS MEMORANDUM (WWW.MUTCD.DELDOT.GOV).
7. ADDITIONAL USAGE OF TRAFFIC OFFICERS OUTSIDE OF THE ABOVE REQUIREMENTS SHALL BE APPROVED BY THE ENGINEER IN CONSULTATION WITH THE TRAFFIC SAFETY SECTION.
8. ALLOWABLE LANE CLOSURE HOURS WILL BE BETWEEN 7:00 AM AND 5:00 PM PRIOR TO MAY 2020. ALL CHANNELIZING DEVICES SHALL BE REMOVED FROM THE ROADWAY DURING NON-CLOSURE TIMES.



SEE TA-33 FOR TEMPORARY SIGN PLACEMENT

L = 60' MINUS

WORK ZONE WARNED

TABLE = 00'

- There has been MOT created for working in an area where the shoulder is actually a bike/PED lane.
 - This involves closing a lane of traffic and placing the bike/peds into that closed lane and channelizing them with specialty signage.

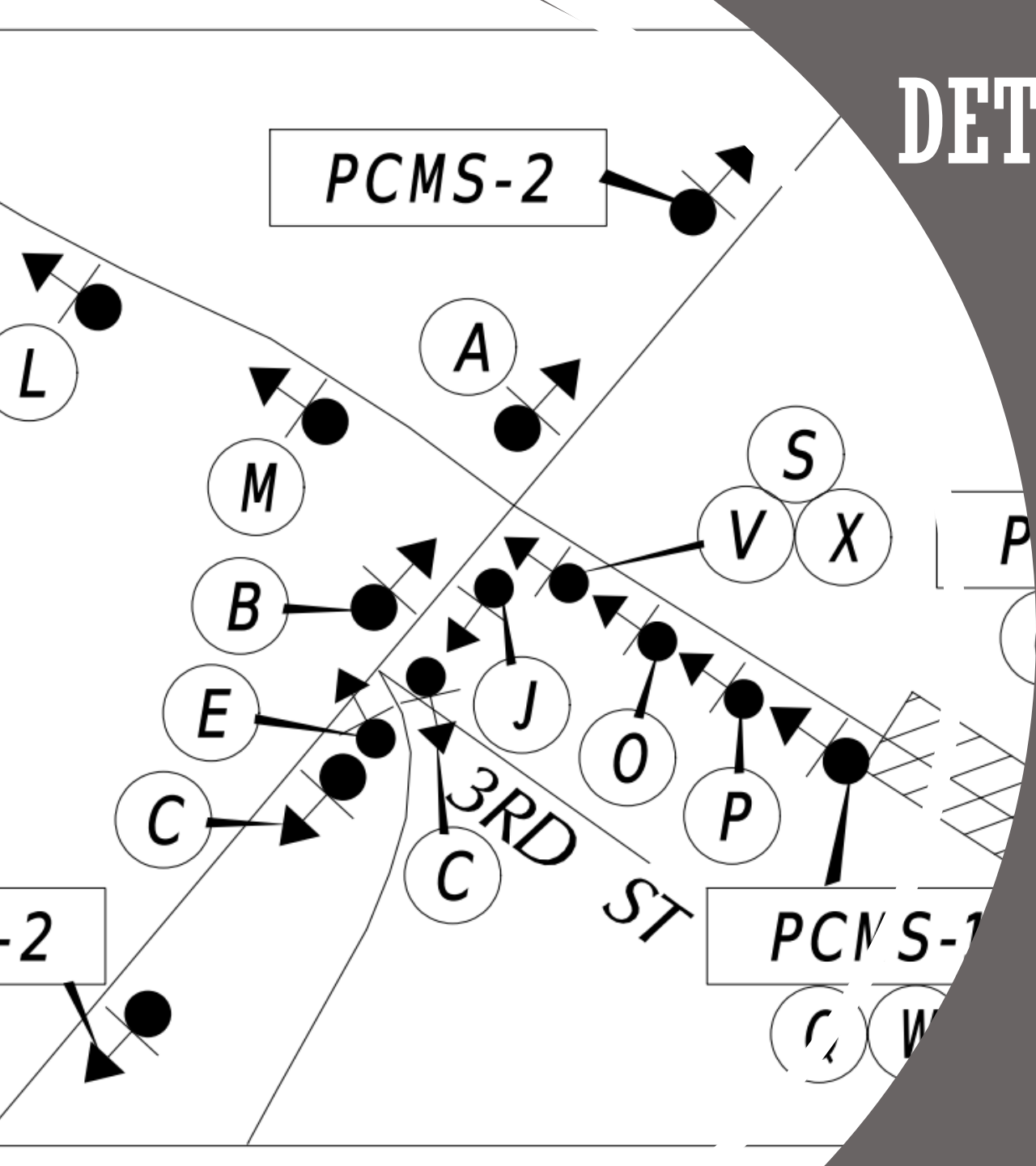


SPECIFIC MOT FOR PEDESTRIANS / BIKES

- Pedestrians and Bikes must be maintained
 - Once the MOT is in place, it must remain unobstructed just as an open lane of traffic would be.



DETOUR DESIGN & APPROVAL



- Detours must be submitted to traffic safety for review and approval
 - Must be on our boarder with our legend.
 - Must be signed and sealed by and engineer.
 - Needs to be added into the UPA for that permit.
 - The project manager (DeIDOT) needs to submit the road closure for along with the signed detour.
- Once the above is completed the traffic safety officer for that district will approve the road closure.
- Contact for detour review submissions:
 - David Wynn: David.wynn@delaware.gov



QUESTIONS

