
624 EMERGENCY VEHICLE PREEMPTION

Emergency Vehicle Preemption (EVP) devices and systems may be installed on traffic signal systems on the State Highway System by a local agency under an approved encroachment permit in accordance with these guidelines. **The local agency shall be responsible for all costs including the development, design, construction, and installation of the EVP system.** The installation is subject to inspection by ADOT. These responsibilities will be documented in an Intergovernmental Agreement that is prepared by the IGA Section when initiated by the Project Manager.

The installation of an EVP device on a traffic signal does not in any way reduce the responsibility of the emergency vehicle operator to ensure the intersection is clear prior to entering the intersection. The sole purpose of the EVP device is to facilitate clearing the intersection so the emergency vehicle can proceed with minimal delay.

For traffic signals maintained by ADOT, ADOT remains responsible for signal timing and for maintenance of all components within the controller cabinet, except the EVP system. The local agency is responsible for maintenance of the EVP system, including all EVP components within the controller cabinet and any components attached to a signal pole or mast arm. Local agencies are also responsible for the maintenance of all other associated components of the EVP system (e.g., transmitters installed on fire trucks or ambulances). Local agencies are responsible for furnishing and replacing all components for the EVP system, including EVP components located in the controller cabinet, any sensor devices, and an emitter for testing as specified in the required Intergovernmental Agreement (IGA). Any needed training for traffic signal technicians shall be paid for by the local agency. The costs, maintenance responsibilities, maintenance components, testing equipment, timing responsibilities, and training needs shall be set in the IGA.

For traffic signals not maintained by ADOT, the local agency shall be responsible for maintenance of the entire EVP system as well as the signal timing and maintenance of all other components within the controller cabinet. These costs, maintenance, and timing responsibilities shall be set in required IGAs.

IGAs entered into agreement prior to the issuance of these guidelines may remain in effect.

The following paragraphs describe the conditions under which EVP shall be installed, operated, and maintained:

1. System approval shall be made by the Regional Traffic Engineer in conjunction with the emergency services agency.
2. Upon installation of a new emergency vehicle preemption system, ADOT regional maintenance personnel, ADOT Systems Maintenance Group field personnel, and local emergency services personnel will conduct joint operational tests. A representative of the EVP system supplier should also be present to provide technical assistance during the initial operational tests. These tests verify the operational status of the system as well as the suitability of the calculated pedestrian clearance times. Pedestrian clearances should typically not be abbreviated upon receipt of a valid preemption call. If it is determined that the pedestrian clearance times are too long to ensure unrestricted passage of emergency vehicles, they may be abbreviated. ADOT Systems Maintenance Group personnel will determine a suitable pedestrian clearance time, subject to final approval by the State Operational Traffic and Safety Engineer.
3. Different intersection designs require a variety of emergency vehicle detection and preempt sequence configurations. Figures 624-A through 624-E show examples of typical intersections with recommended detection and preemption routines.
4. In intersections where there are permissive left turns, or exclusive/permissive left turns are implemented, detection will be limited to two channel operation, and two preempt routines. This prevents the "left turn trap" car predicament. *(A driver who is waiting in the intersection to turn left, sees all the traffic signals on the approach change to yellow + red and observes the adjacent through traffic stop. Therefore, the driver might erroneously assume the opposing traffic will stop, and either turn unknowingly into the path of opposing traffic that still has the green, or be trapped in the middle of the intersection.)*
5. Emergency vehicle preemption equipment and routines will be installed to match existing phasing and left turn configurations. Intersection phasing and left turn configurations will not be changed solely to accommodate a desired preempt routine.
6. Emergency vehicle preemption confirmation lights may be installed if requested by the local agency and approved in writing by the Regional Traffic Engineer. Existing confirmation lights may remain in place.
7. The Regional Traffic Engineer or the Systems Maintenance Engineer is responsible for establishing the necessary Intergovernmental Agreement(s) for the emergency vehicle preemption systems. The local agency shall be responsible for supplying any necessary replacement parts. The Traffic Maintenance Warehouse does not stock or warehouse EVP equipment.

The installation of EVP systems on traffic signals on State highways shall be approved by the Regional Traffic Engineer prior to the finalization of the IGA.

Figure 624-A. EVP for Permissive Left Turns – N & S + E & W

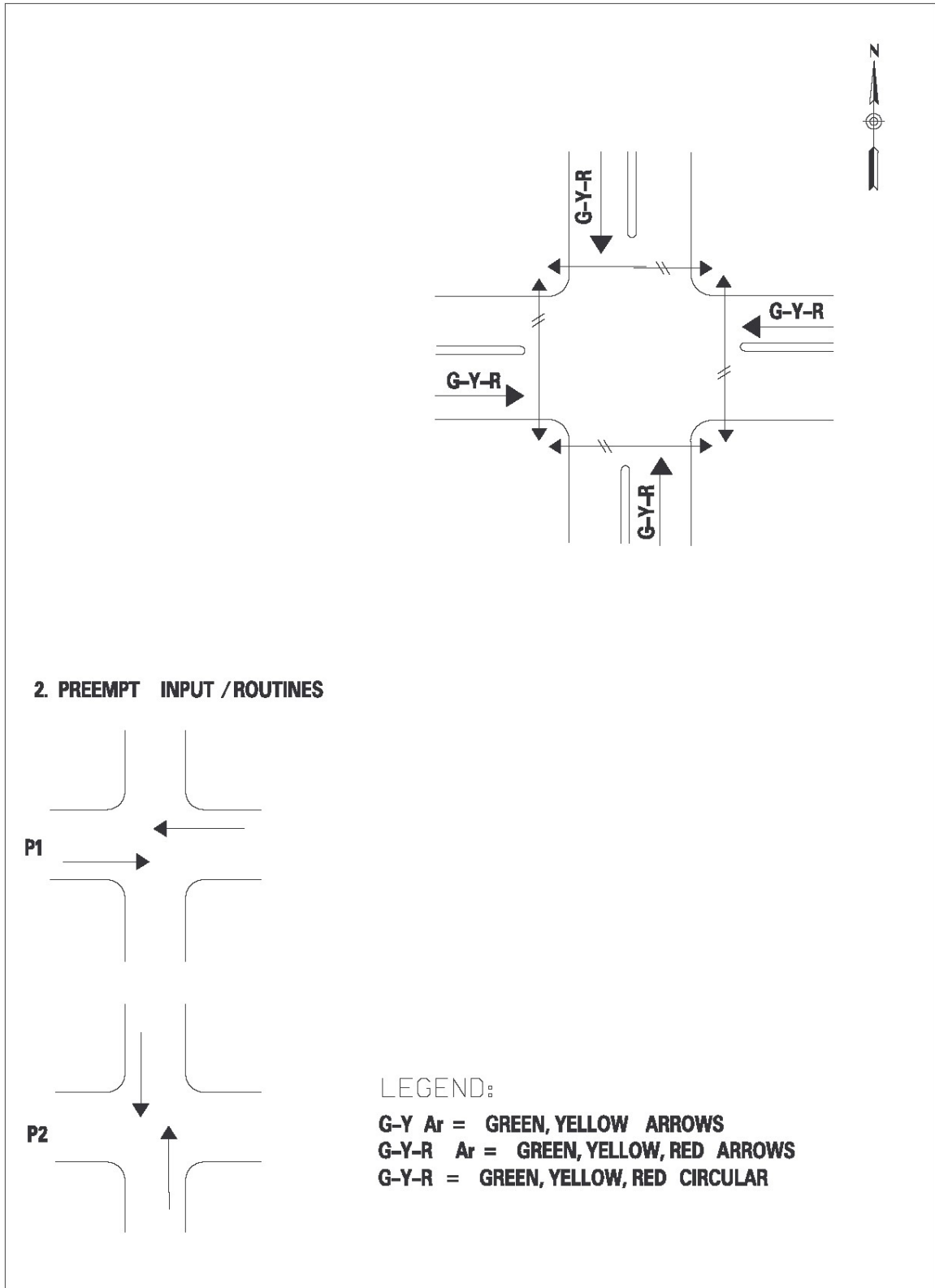


Figure 624-B. EVP for Exclusive / Permissive Left Turns - E & W + N & S

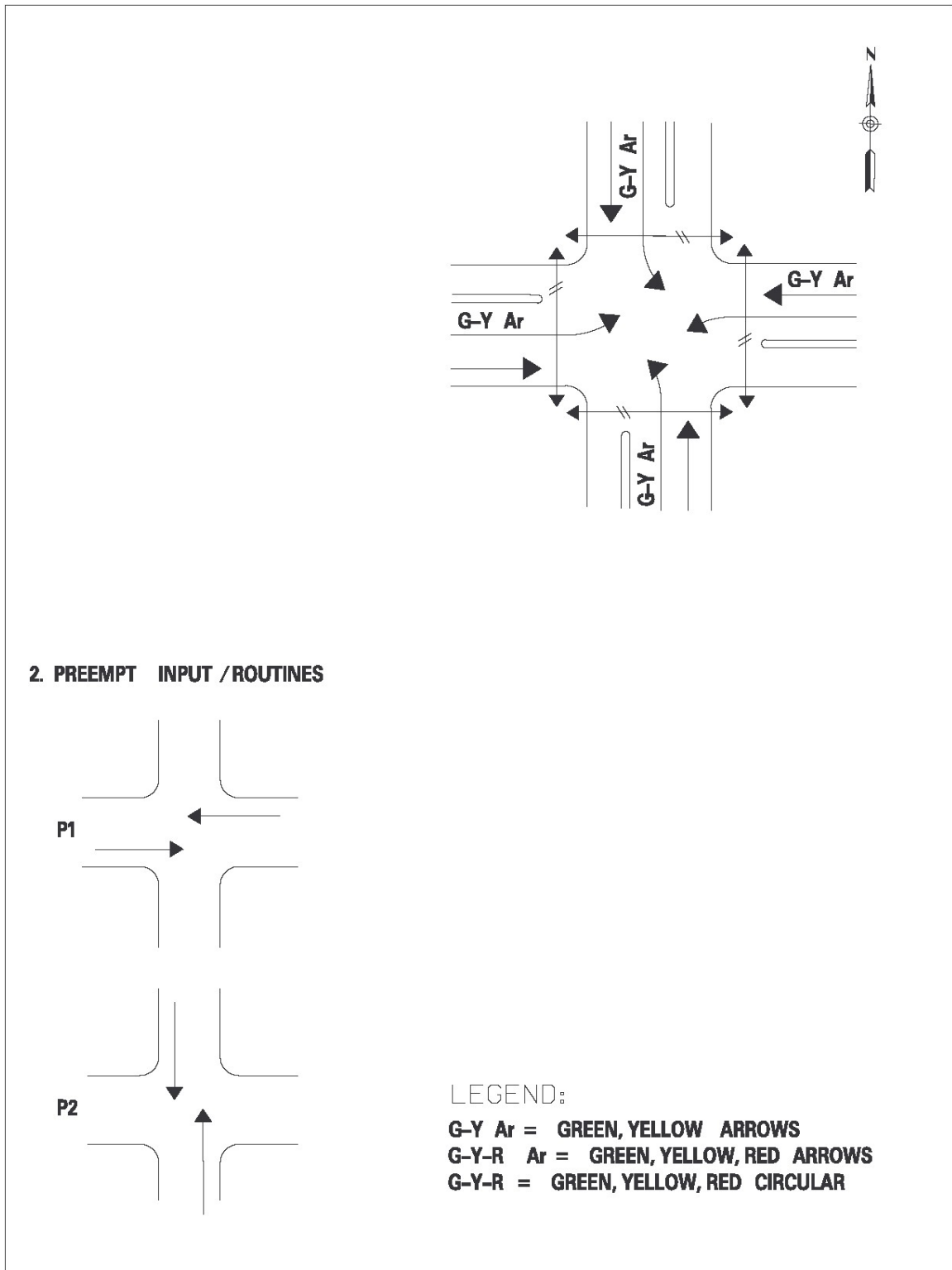


Figure 624-C. EVP for Permissive Left Turns N & S and Exclusive Left Turns E & W

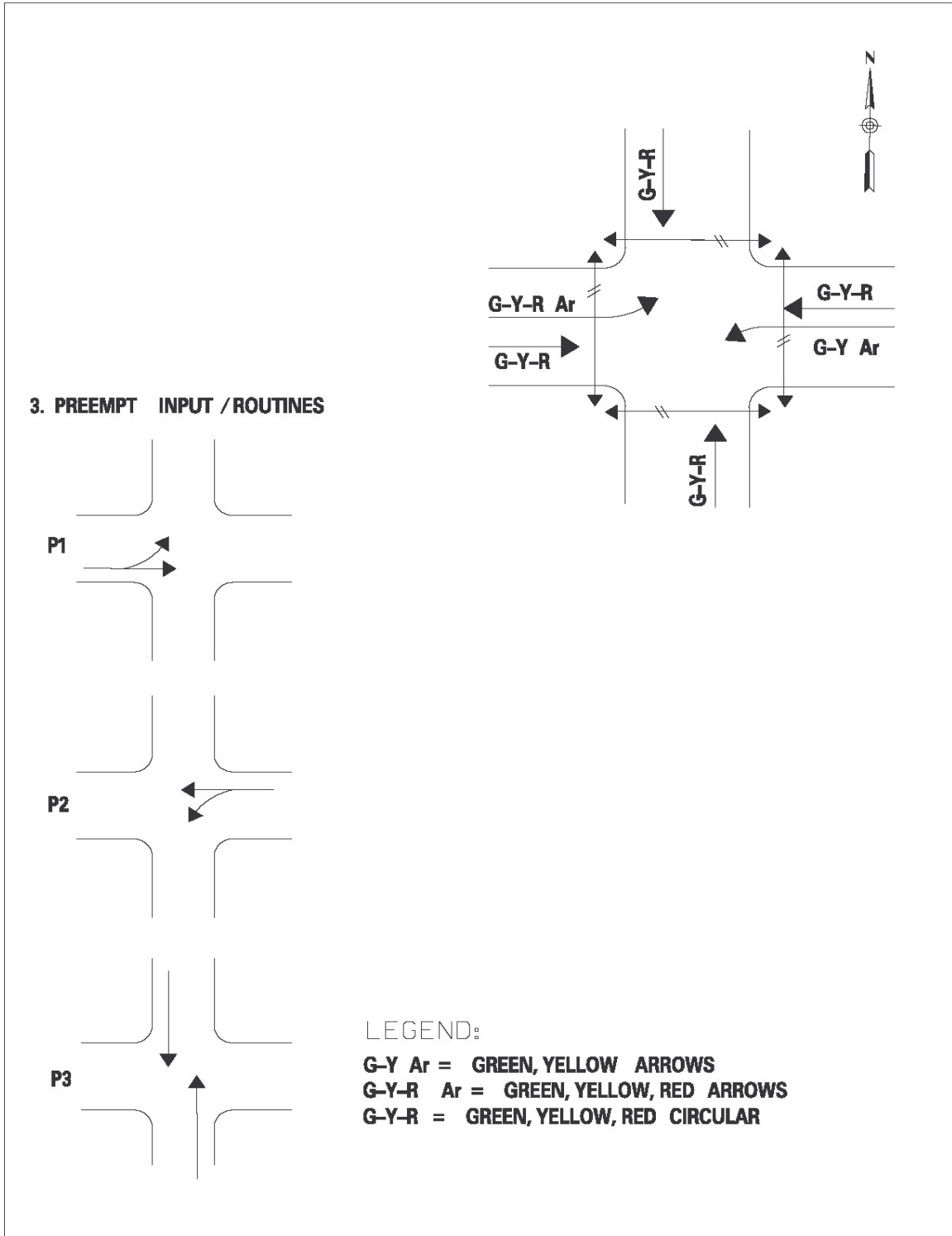


Figure 624-D. EVP for Exclusive Left Turns – E & W + N & S

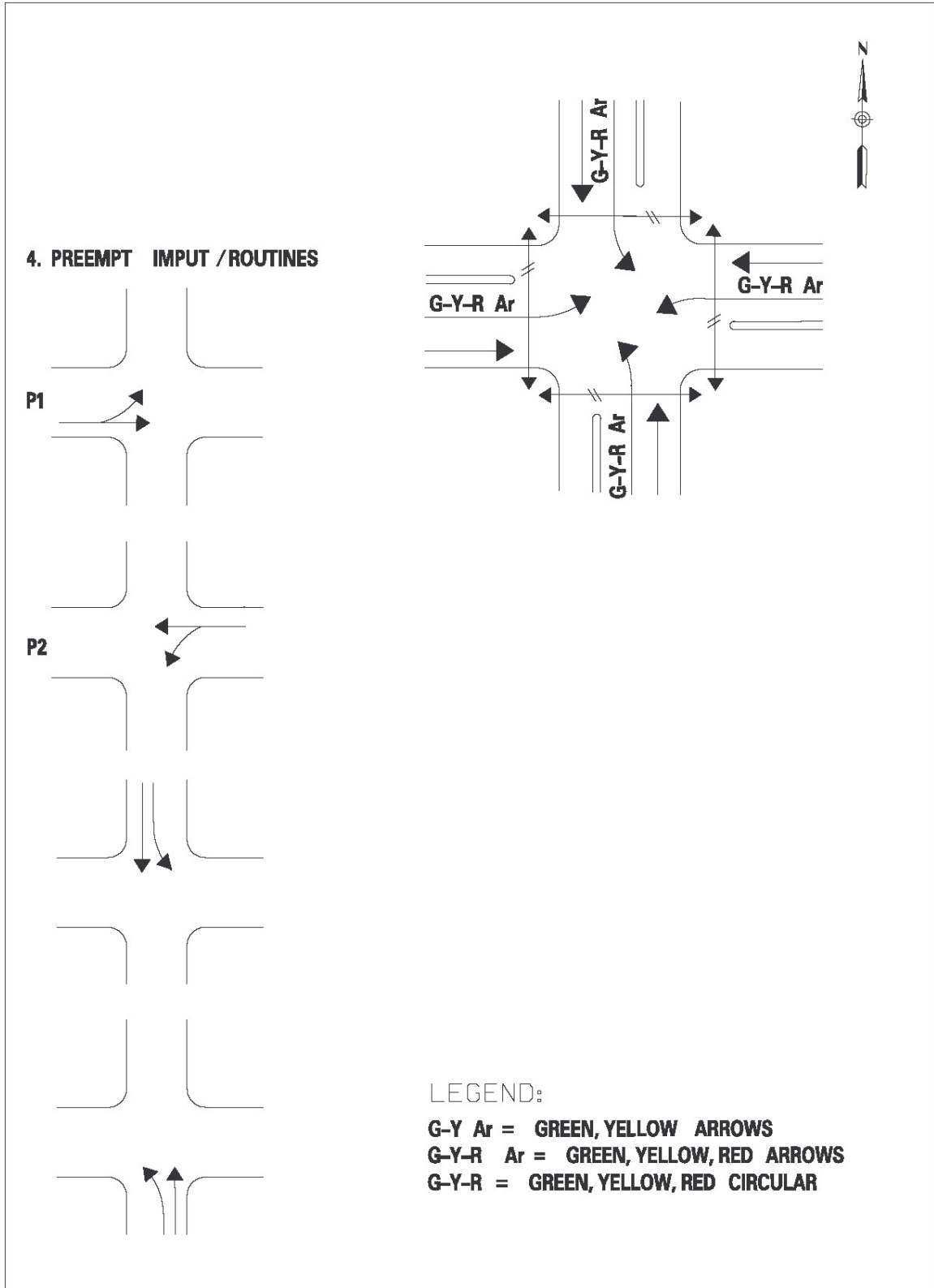


Figure 624-E. EVP for Permissive Left Turn SB, Exclusive / Permissive Left Turn EB, No Left Turn WB

