

SIGNAL PLAN LAYOUT

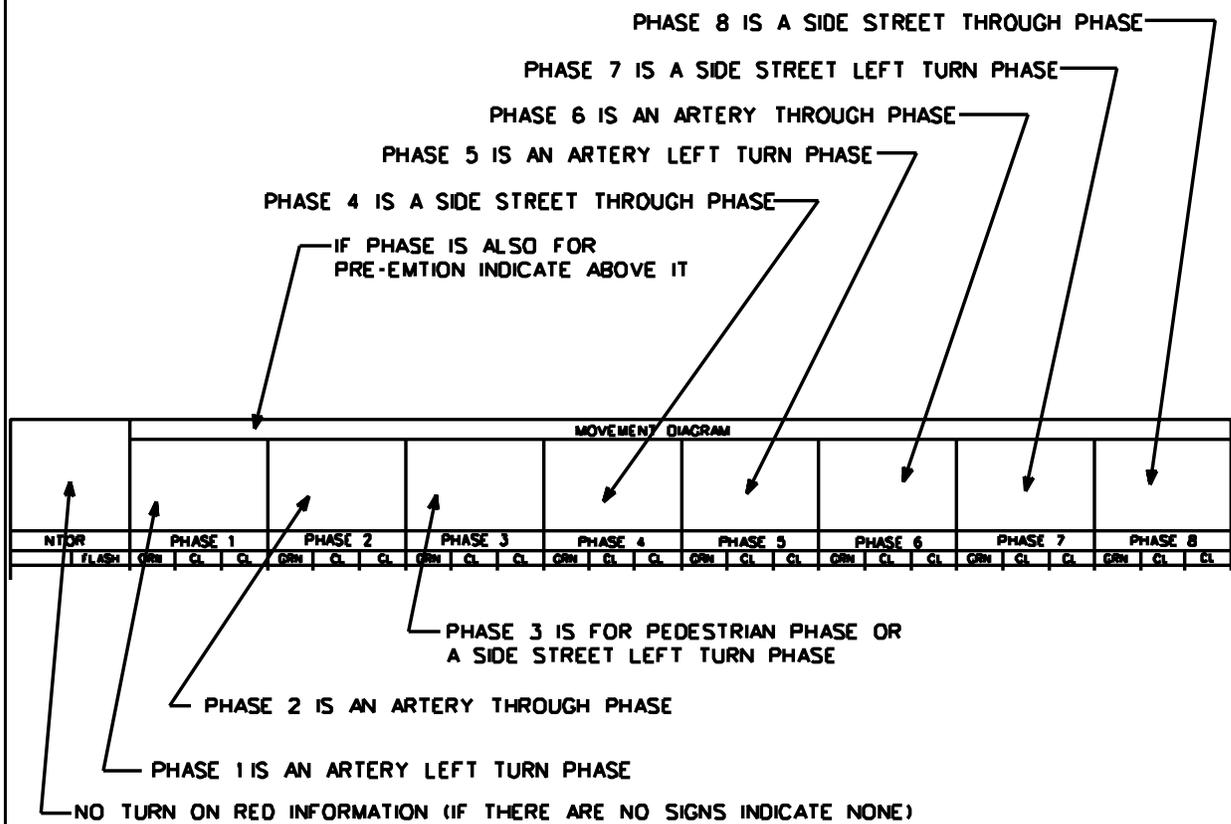
The following pages provide design guidelines and general considerations for completing the signal form. The designer should refer to specific sections of the design manual for detailed design information.

The sequence and timing section follows two different formats, one for sequential phasing and one for dual ring or quad phasing. For sequential phasing, fill in the phases working from left to right. Phase 1 is typically reserved for an artery advance, phase 2 for the artery through movement and phase 3 for an exclusive pedestrian phase. For dual ring phasing or quad operation, pay particular attention to the phase numbers with respect to which movement is typically controlled by that phase.

The **numbering of signal faces** should always be split so that each leg of the intersection has different numbered signal faces. When designing a full or half quad type signal, number the signal faces to correspond to the phases. For ease of trouble shooting and/or inspecting a traffic signal, always number the signal faces with the corresponding phase where possible (this is not possible in two phase operation).

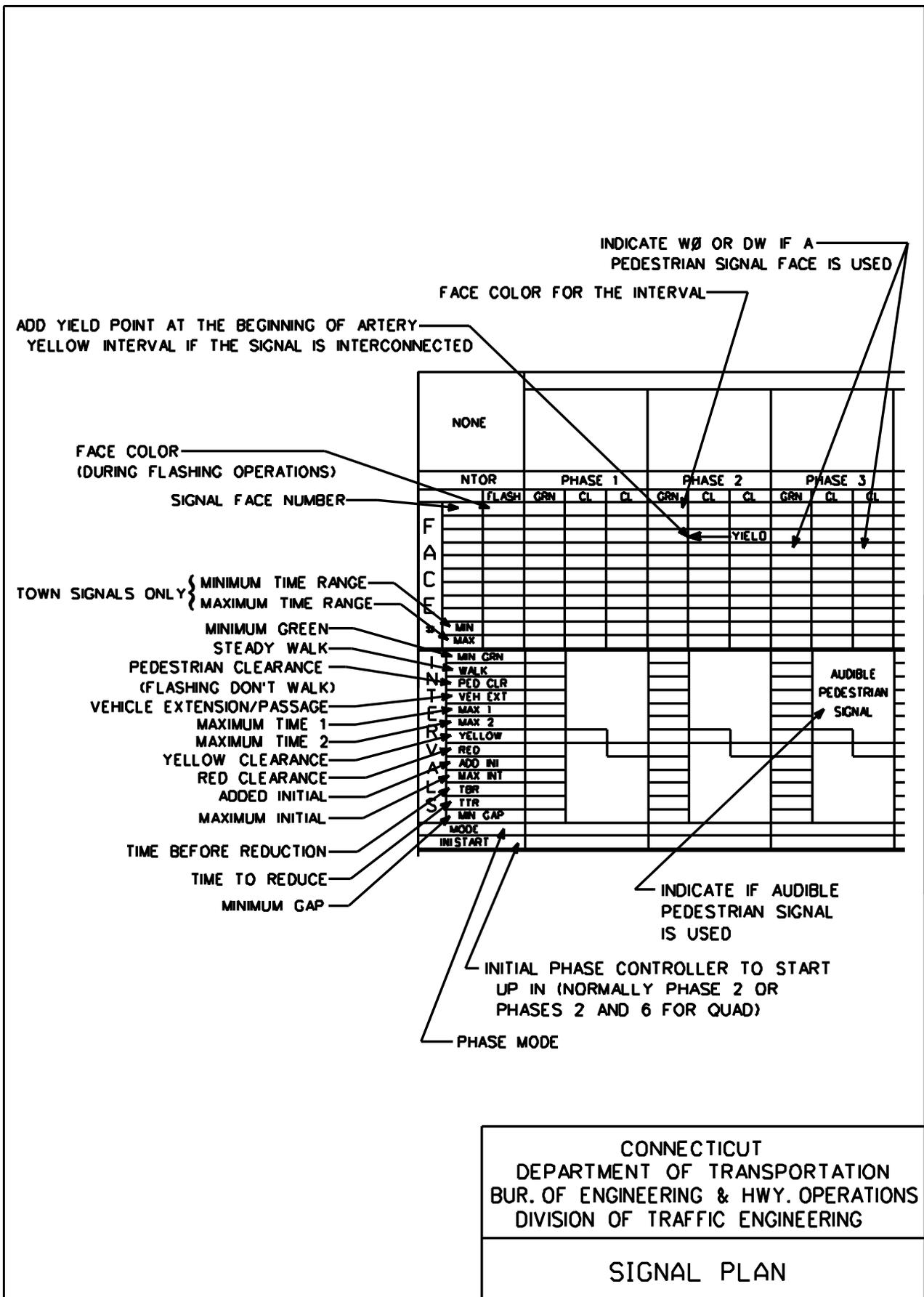
Drafting guidelines and requirements are detailed in the Drafting Guidelines section of this manual.

TYPICAL PHASE ASSIGNMENTS



CONNECTICUT
 DEPARTMENT OF TRANSPORTATION
 BUR. OF ENGINEERING & HWY. OPERATIONS
 DIVISION OF TRAFFIC ENGINEERING

SIGNAL PLAN



METER NUMBER

INSERT INTERSECTION NUMBER (000-000)

SERVICE POLE OR MANHOLE NUMBER

COMPLETE OFFICE RECORD

INDICATE WHO WILL BE PAYING FOR THE ELECTRICITY NEEDED TO OPERATE THE SIGNAL

INDICATE THE TYPE OF MAINTENANCE LEVEL

FILL-IN BLOCK (METERED or UNMETERED SERVICE)

ENERGY BY- MAINT LEVEL

METER # - SERVICE POLE-

INTERSECTION*

OFFICE RECORD

SIGNAL FACES

SYC #

SM #

PLACE SIGNAL HEADS, THEIR SIZES AND NOTES FOR BACKPLATES, LOUVERS, TUNNEL VISORS, LED LAMPS ETC.

PROFESSIONAL ENGINEER'S STAMP FOR CONSULTANT DESIGN. CADD LOGO FOR DOT DESIGN

IF IT WILL BE A TOWN SIGNAL THEN ADD HERE

TOWN SIGNAL

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUR. OF ENGINEERING & HWY. OPERATIONS
DIVISION OF TRAFFIC ENGINEERING
TRAFFIC CONTROL SIGNAL

REV #	DATE	TRAFFIC	ELECTRICAL
ENGINEER			
DRAFTER			
CHECKED BY			
SUBMITTED BY			
APPROVED BY			
DATE			

LEGEND:

R	RED	RED SIGNAL	RED SIGNAL	RED SIGNAL
Y	YELLOW	YELLOW SIGNAL	YELLOW SIGNAL	YELLOW SIGNAL
G	GREEN	GREEN SIGNAL	GREEN SIGNAL	GREEN SIGNAL

TOWN NAME AND INTERSECTION DESCRIPTION

REVISION NUMBER

TRANSPORTATION ENGINEER'S INITIALS *

DRAFTER'S INITIALS *

* PRINCIPAL ENGINEER'S SIGNATURE

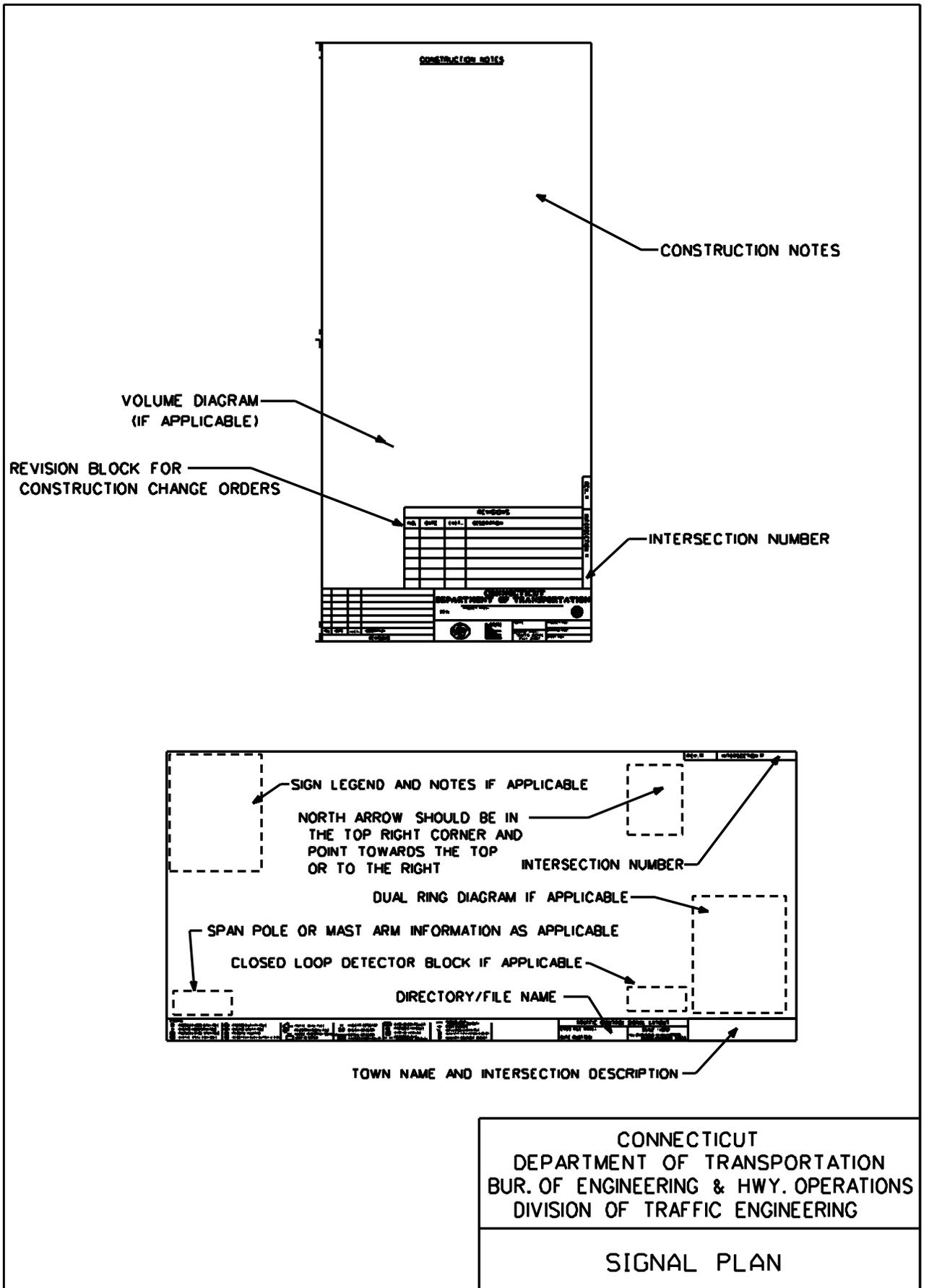
* SUPERVISING ENGINEER'S INITIALS

* CHECKER'S INITIALS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUR. OF ENGINEERING & HWY. OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

SIGNAL PLAN

* FOR CONSULTANT DESIGNS ADD FIRM NAME



PEDESTRIAN/BICYCLIST CONSIDERATIONS

The design and operation of a traffic control signal takes into consideration the particular characteristics of the intersection as well as the needs of vehicular, pedestrian and bicycle traffic. When pedestrians or bicyclists approach a signalized intersection they are legally required to follow the same red, yellow, and green indications that are provided to control the motorist unless there are separate pedestrian indications. There are circumstances where it is reasonable to expect pedestrians to have a need to cross a street and conditions may be such that, if the basic signal operation does not include satisfactory provision for pedestrians, they may need access to a push button that would modify the basic signal operation to provide suitable phasing and timing.

Due to the wide variety of field conditions, it is not possible to list all situations where push buttons should or should not be provided; however, the majority of situations may be accounted for by considering the pedestrian presence potential and need.

The following condition suggests the need for pedestrian push buttons:

1. Where it is reasonable to expect a minimum number of pedestrians/bicyclists regularly occur and the existing signal operation does not automatically present that signal phase needed by the crossing pedestrian/bicyclist with adequate timing or detection.

The following conditions suggest pedestrian push buttons need not be provided:

1. Remote areas without indications of a pedestrian/bicyclist presence.
2. The pedestrian crossing would be to an area restricted to pedestrians, e.g., freeway on- or off-ramps.
3. The pedestrian crossing would otherwise be illegal.
4. One of the termini at the crossing location is such that it lacks a walking area or a reasonable site for a pedestrian presence and is considered highly undesirable or potentially hazardous, e.g., physically restricted by guide rail, steep embankment, retaining walls, bridge pier or abutments.
5. Where a reasonable person could understand that the movement over the crossed street could and/or should be made across another leg, e.g., sidewalk or level roadside or wide shoulder area on the approaches to another intersection leg.

Where it is desired to prohibit certain pedestrian movements at a traffic control signal, a **No Pedestrian Crossing** sign (refer to MUTCD section 2B-39) may be used.

Each pedestrian/bicyclist crossing movement should be considered on a case-by-case basis. In those instances where pedestrian push buttons are not provided, the State Traffic Commission report will describe the crossing affected and the reason for the absence of the push buttons.

At locations where pedestrian buttons are provided, the pedestrian buttons are to be located in an accessible spot reasonably removed from traffic. In areas of continuous sidewalks, the pedestrian buttons should be accessible from the sidewalk. If the sidewalk does not have a ramp, the construction of a pedestrian ramp and landing area is pursued.

Pedestrian actuation of **side-street green** for crossing the arterial may require more time than might otherwise be allotted to the side street phase. Pedestrians should normally be provided time to cross from gutter to gutter at a normal walking speed of 1.2 meters per second (4 ft/sec). In areas where elderly pedestrians or pedestrians who may travel at a slower pace are expected, a walking speed of less than 1.2 meters/per second (4 ft/sec) should be used. Additionally, a side street signal indication must be visible to the pedestrian.

Pedestrian signal heads are special types of traffic signal indications intended for the exclusive purpose of controlling pedestrian traffic. They may also be of use to bicyclists. These heads consist of the illuminated symbols of a walking person (symbolizing walk) and an upraised hand (symbolizing don't walk). The meanings of pedestrian signal heads are as follows:

1. The upraised hand symbol, steadily illuminated, means that a pedestrian shall not enter the roadway in the direction of the head.
2. The upraised hand symbol, while flashing, means that a pedestrian shall not start to cross the roadway in the direction of the head, but that any pedestrian who has partly completed the crossing during the steady walk symbol shall proceed to a sidewalk, or to a safety island.
3. The walking pedestrian symbol means that a pedestrian facing the signal head may proceed across the roadway in the direction of the head. The walking pedestrian symbol means that there may or may not be possible conflict of pedestrians with turning vehicles.
4. **LED** pedestrian signal heads are available in both 200 mm (8-inch) high or 280 mm (11-inch) high symbols. The 200mm (8-inch) high symbols are more appropriate when the visibility distance needed is short and where there are aesthetic considerations. Note: the brightness and intensity of the LED pedestrian signal heads is considerably greater than the incandescent.

Pedestrian signal heads may be used in conjunction with a pedestrian phase where all vehicle traffic (except right-turn-on-red) is stopped. This is commonly referred to as an **exclusive pedestrian phase**. Pedestrian calls are remembered by the controller regardless of the phase mode setting. To prevent unnecessary vehicle calls, the exclusive pedestrian phase mode is non-lock.

Pedestrian signal heads may also be used to control when pedestrians may start to walk with the green indication for vehicles going parallel to the pedestrian crossing. This is commonly referred to as a **concurrent pedestrian movement**. When the artery is on recall, pushbuttons are needed only to actuate the side street phase. The artery phase is placed on pedestrian recall, as well as vehicle recall, and buttons are not needed to cross the side street. A special pedestrian pushbutton sign is needed such as 31-0838 (with arrow).

In normal practice the **walk** is for a period of time, say seven (7) seconds, to allow a group of people behind the curb to realize they may start to walk and step into the street, but be watchful of turning cars. The **flashing don't walk** clearance should provide sufficient time for the pedestrian to walk from the curb line to the center of the farthest travel lane at a normal walking speed of 1.2 meters per second (4 ft/sec). In areas where elderly pedestrians or pedestrians who may travel at a slower pace are expected, a walking speed of less than 1.2 meters per second (4 ft./sec) should be used.

Audible Pedestrian Signals can be installed when there is a request made by a visually impaired pedestrian and the Division of Traffic Engineering verifies the need with Connecticut Services for the Blind.. The audible signal shall be active to coincide with the visual walk indication and pulse to coincide with the visual don't walk indication. When an existing traffic control signal that has an audible signal is redesigned, the need to maintain the audible signal equipment should be confirmed with the Connecticut Services for the Blind by the Division of Traffic Engineering.