

# GENERAL NOTES

## XXVI - SPECIFICATIONS FOR DIAL COORDINATING UNITS - Continued

Offset	Features		Type
	Split	Force-Off	
3	1	-	Secondary
3	3	-	Secondary
3	-	4	Secondary
4	2	-	Secondary
4	-	3	Secondary
5	1	-	Secondary
1	-	-	Master Interruptor
1	(1	or 4)	Master
1	3	-	Master

Each dial coordination unit shall be designed for provision of split transfer through use of an optional printed circuit board to provide split transfer capability in association with 7 contact dial unit(s).

All printed circuit board control relays shall be plug-in type and completely interchangeable with one another to simplify maintenance requirements.

The dial coordinating unit shall be plug-connected to the controller panel so that it may be replaced with a similar unit without the necessity of disconnecting or reconnecting individual wires. The plug connection shall be MS type.

An applicable five position selector switch shall be located within the controller cabinet for manual local selection of dial and/or split. Also, a four position selector switch shall be located within the controller cabinet for local reset test. All switches shall be installed in the same switch box.

The coordinating unit shall be equipped with indicating lights for cycle, offset and/or split functions in effect and include test switches to determine cycle and/or split called for by the master.

An external free operation relay assembly shall be included to allow free operation of the timer when system interconnect is off or when the coordinating unit is removed from the circuit.

Master Supervisory Functions - When specified, the coordinating unit shall be equipped with master supervisory dial unit contacts for automatically establishing the offset relationship of the secondary dial coordinating units within the system.

### E) OPERATION:

#### 1) Sequence:

The coordinating unit shall provide and allow for consecutive divisions of a time cycle hereafter termed intervals.

#### 2) Timing:

It shall be possible to set up a separate and distinct program of interval timing on each dial unit.

It shall be possible, when specified, to transfer operation from one dial to another, and/or one split to another, remotely or automatically. Automatic transfer shall be accomplished through the use of time switches. Remote transfer shall be accomplished from the master-interconnect circuit.

## XXVI - SPECIFICATIONS FOR DIAL COORDINATING UNITS - Continued

The coordinating unit shall be so arranged that the transfer of the interval timing from one dial unit to another and/or one split to another may be accomplished at the beginning of the main street green interval or any other chosen interval.

The switching from one dial to another and/or one split to another, shall be accomplished through the use of electrically latched relays. (See Sheet No. 14 for PAYMENT) \*\*

## XXVII - 625 PEDESTRIAN SIGNAL HEAD, INCANDESCENT COLORED LAMP

This item shall consist of furnishing and installing incandescent colored lamp pedestrian signal heads of the size shown on the plans, and installing them as shown on the detail Sheet No. 40 and as herein specified. Pedestrian signals shall be in accordance with "Adjustable Face Pedestrian Signal Head Standard" as approved by the Institute of Traffic Engineers (ITE) Board of Direction, June 29, 1963, with the following exceptions and qualifications.

1) A pedestrian signal head shall be a complete unit capable of displaying both of the indications "Walk" and "Don't Walk" to one approach of pedestrian traffic, together with all incidental items described below and in the details which are required to complete the installation.

2) The nominal size of each unit lense face shall be 16 x 22 inches. The "Walk" indication shall be "Lunar White" Light and the "Don't Walk" indication shall be "Portland Orange" Light.

3) Visors shall be 6 inches in length and shall extend from the top and both sides of the lense.

4) Exterior metal surfaces including mounting brackets shall be finished with dark green color paint with the exception of the interior surface of visors which shall be finished with flat black paint.

5) All necessary brackets, nipples, conduit, trunnions, and other hardware required for either pedestal top or pole mounting as shown on the plans and details, shall be included in, and considered incidental to, the unit price bid for pedestrian signal heads.

6) Incandescent colored lamp type pedestrian signals shall be similar in construction to gas filled grid type pedestrian signals with the following exceptions:

- a) Illumination shall be provided by type A-21 Incandescent lamps which shall emit a lunar white or orange light as required below, and reflector of the proper shape to fully and evenly light the "don't" lense or the "walk" lense. One orange producing lamp shall be placed in the "don't" lense compartment and two white and one orange lamps shall be placed in the "walk" lense compartment. Wiring and connections shall be arranged in a manner that during one period both the "don't" and "walk" lenses are illuminated by orange lamps and there shall be no possibility of one orange lamp not functioning, thereby providing illumination of only one lamp; and during another period only the "walk" lense will be illuminated by the two white lamps. There shall be no leakage of light between the two lense compartments. There shall be no possibility of only one lense compartment being illuminated during the "don't walk" interval due to bulb failure or other malfunction.

## XXVII - 625 PEDESTRIAN SIGNAL HEAD, INCANDESCENT COLORED LAMP - Continued

b) The reflector, if assembled of more than one piece, shall be fabricated with welds, screws, rivets or other positive locking fasteners. The use of only tab and slot assembly methods will not be permitted.

c) The reflector shall be rigidly assembled or constructed of a material which will not corrode, change color or change reflective properties significantly under normal urban atmospheric conditions.

d) A positive electrical "fail safe" shall be provided which shall guarantee against the display of an orange "Don't" or an orange "walk" separately. That is a lamp burn out or other fault condition shall never result in either lens being illuminated in orange without the other lens being similarly illuminated. This shall be accomplished without the use of relays, mechanical means, moving parts or separate filters.

Payment for Item 625 Pedestrian Signal Head, Incandescent Color Lamp will be at the unit price bid per each, complete and installed, including signal head, light source, mounting brackets, miscellaneous fittings and testing.

## XXVIII - LOOP DETECTOR AMPLIFIER

The loop detector amplifier is an electronic device that shall detect the presence or motion of a mass of metal. This detection is accomplished by the passage of a car over a wire loop imbedded in the roadway.

The amplifier shall conform to the following:

- 1) The detector shall operate satisfactory at any temperature between -30°F. and +165°F.
- 2) The operating voltage shall be 115 volt, 60 cycle.
- 3) The internal circuitry shall be incorporated into printed circuit board assemblies.
- 4) The detector design shall include a fixed frequency crystal which will generate a sine wave form of signal.
- 5) No external equipment shall be necessary for installation, tuning or sensitivity adjustments.
- 6) Various types of outputs shall be available including pulse and presence. These outputs shall be available by switching from one to the other without changing any internal parts.
- 7) All transistors, crystals, and relays shall be of the plug-in type to facilitate replacement.
- 8) The amplifier and power supply shall be capable of driving several loops from the one source. The amplifier shall be capable of detecting vehicles in a total area of up to 400 sq. ft. and shall properly function with lead-in lengths totaling up to 750 feet.

The above types of loop detector amplifiers and power supply shall be Automatic Signal No. LD-1, or LD-2 Decatur No. L.S.M.H. or Automatic Control Equipment Model LD-100 or approved equal.

Payment for Item 625 Loop Detector Amplifier will be made at the contract unit price for each detector amplifier, completely wired and installed in controller cabinet.