

### SIGNAL DISPLAY CHART

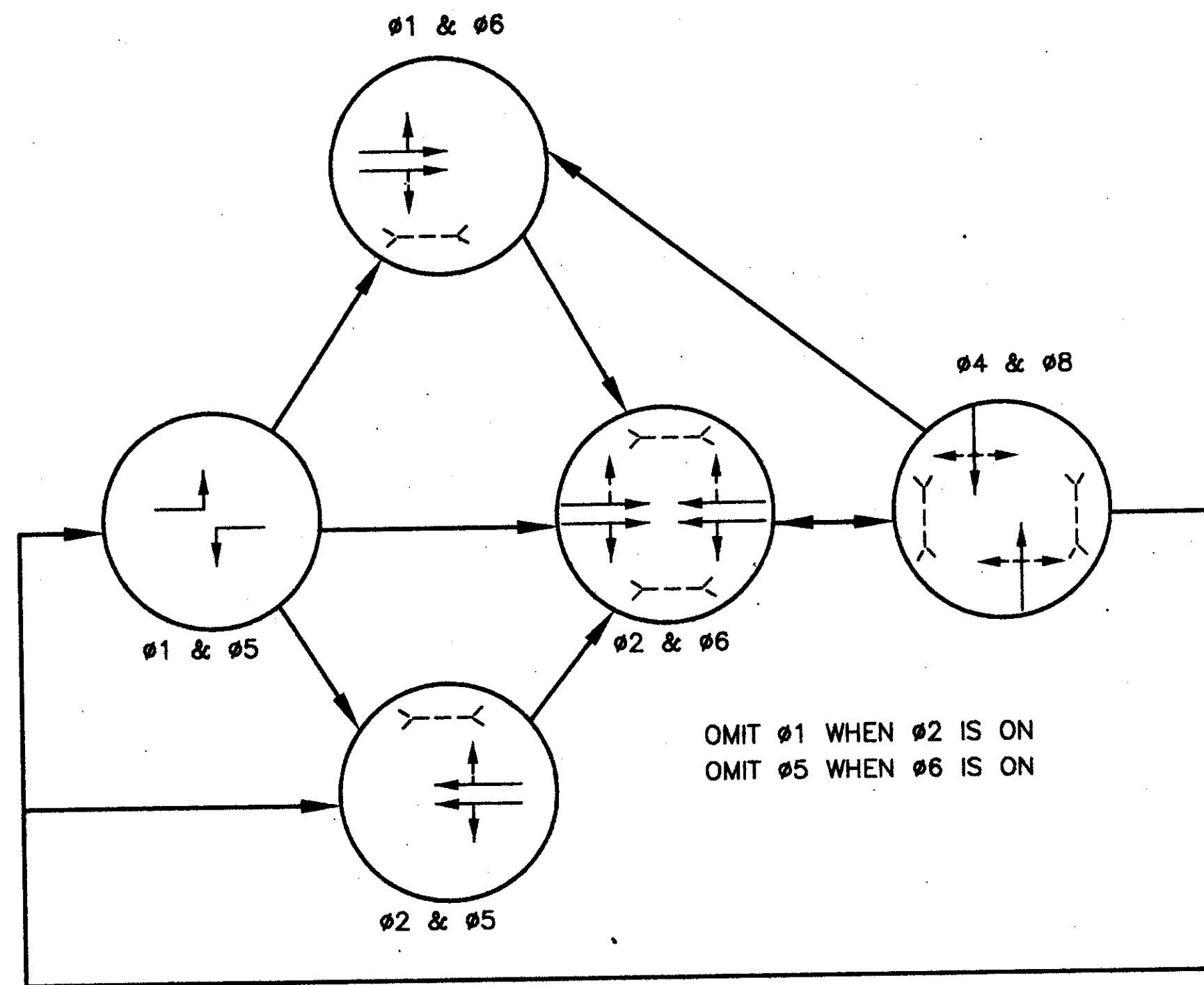
| SIGNAL HEAD | #1 & #5 |       | #1 & #6 |       | #2 & #5 |       | #2 & #6 |       | #4 & #8 |       | FLASH |
|-------------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|-------|
|             | R/W     | CLEAR | R/W     | CLEAR | R/W     | CLEAR | R/W     | CLEAR | R/W     | CLEAR |       |
| A           | ←/R     | ←/R   | R       | R     | ←/G     | ←/G   | G       | G     | Y       | R     | Y     |
| B           | R       | R     | R       | R     | G       | G     | G       | G     | Y       | R     | Y     |
| C           | ←/R     | ←/R   | ←/R     | ←/R   | ←/G     | ←/G   | G       | G     | Y       | R     | Y     |
| D           | R       | R     | R       | R     | G       | G     | G       | G     | Y       | R     | Y     |
| E           | R       | R     | R       | R     | R       | R     | R       | R     | R       | R     | R     |
| F           | R       | R     | R       | R     | R       | R     | R       | R     | R       | R     | R     |
| G           | R       | R     | R       | R     | R       | R     | R       | R     | R       | R     | R     |
| H           | R       | R     | R       | R     | R       | R     | R       | R     | R       | R     | R     |
| W-W         | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW    |
| X-X         | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW    |
| Y-Y         | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW    |
| Z-Z         | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW      | DW    | DW    |

1. REMAINS ←/R IF #1 & #6 IS NEXT.
2. REMAINS ←/R IF #2 & #5 IS NEXT.

### ESTIMATED QUANTITIES

| ITEM | QUANT | UNIT      | DESCRIPTION  |
|------|-------|-----------|--|
| 202  | 21.9  | SQ. METER | WALK REMOVED, AS PER PLAN  |
| 608  | 21.9  | SQ. METER | 100mm CONCRETE WALK  |
| 625  | 8.9   | METER     | CONDUIT, 51 mm, 713.04   |
| 625  | 3.2   | METER     | CONDUIT, 76 mm, 713.04   |
| 625  | 2.0   | METER     | CONDUIT, 102 mm, 713.04  |
| 625  | 64.1  | METER     | CONDUIT, JACKED OR DRILLED, SIZE: 76 mm  |
| 625  | 14.1  | METER     | TRENCH   |
| 625  | 5     | EACH      | PULLBOX, MISC.: 330 mm X 600 mm, AS PER PLAN                                   |
| 625  | 2     | EACH      | PULLBOX, MISC.: 430 mm X 760 mm, AS PER PLAN                                   |
| 625  | 5     | EACH      | GROUND ROD   |
| 630  | 4     | EACH      | SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN                                    |
| 630  | 1.71  | SQ. METER | SIGN, FLAT SHEET, TYPE G   |
| 630  | 4     | EACH      | REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE                                   |
| 632  | 6     | EACH      | VEHICULAR SIGNAL HEAD, 3-SECT., 300 mm LENS, 1-WAY, AS PER PLAN                |
| 632  | 2     | EACH      | VEHICULAR SIGNAL HEAD, 5-SECT., 300 mm LENS, 1-WAY, AS PER PLAN                |
| 632  | 8     | EACH      | PEDESTRIAN SIGNAL HEAD, TYPE D2, AS PER PLAN                                   |
| 632  | 8     | EACH      | COVERING OF VEHICULAR SIGNAL HEAD  |
| 632  | 8     | EACH      | PEDESTRIAN PUSHBUTTON, AS PER PLAN   |
| 632  | 10    | EACH      | DETECTOR LOOP  |
| 632  | 4     | EACH      | LOOP DETECTOR UNIT, AS PER PLAN  |
| 632  | 6     | EACH      | LOOP DETECTOR UNIT, DELAY & EXTENSION TYPE, AS PER PLAN                        |
| 632  | 132.7 | METER     | MESSENGER WIRE, 7 STRAND, 6 mm DIAMETER WITH ACCESSORIES                       |
| 632  | 166.2 | METER     | SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG  |
| 632  | 88.8  | METER     | SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG  |
| 632  | 227.3 | METER     | SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG  |
| 632  | 166.2 | METER     | SIGNAL CABLE, MISC.: PREEMPT DETECTOR CABLE                                    |
| 632  | 4     | EACH      | SIGNAL SUPPORT FOUNDATION  |
| 632  | 840.4 | METER     | LOOP DETECTOR LEAD-IN CABLE  |
| 632  | 13.1  | METER     | POWER CABLE, 3 CONDUCTOR, NO. 6 AWG  |
| 632  | 3     | EACH      | CONDUIT RISER, 51mm DIAMETER   |
| 632  | 2     | EACH      | SIGNAL SUPPORT, TYPE TC-81.20M, DES. 1   |
| 632  | 2     | EACH      | SIGNAL SUPPORT, TYPE TC-81.20M, DES. 2   |
| 632  | 1     | EACH      | REMOVAL OF TRAFFIC SIGNAL INSTALLATION   |
| 633  | 1     | EACH      | CONTROLLER, ACTUATED, 8 PHASE, SOLID-STATE DIGITAL MICROPROCESSOR, AS PER PLAN |
| 633  | 1.4   | SQ. METER | CONCRETE FOR CABINET FOUNDATION  |
| 633  | 1.04  | SQ. METER | CONTROLLER WORK PAD  |
| 633  | 4     | EACH      | CONTROLLER ITEM, MISC.: PREEMPT DETECTORS                                      |
| 633  | 1     | EACH      | CONTROLLER ITEM, MISC.: PREEMPT PHASE SELECTOR                                 |
| 633  | 4     | EACH      | CONTROLLER ITEM, MISC.: CONFIRMATION LIGHT                                     |

### PHASING DIAGRAM



### SIGNAL TIMING

| INTERVAL  | #1   | #2  | #4   | #5   | #6  | #8   |
|-----------|------|-----|------|------|-----|------|
| INITIAL   | 7    | 16  | 10   | 7    | 16  | 10   |
| PASSAGE   | 2.5  | 3.0 | 3.0  | 2.5  | 3.0 | 3.0  |
| YELLOW    | 3.6  | 3.6 | 4.0  | 3.6  | 3.6 | 4.0  |
| RED CLEAR | 1.4  | 1.4 | 2.0  | 1.4  | 1.4 | 2.0  |
| MAX I     | 21   | 31  | 33   | 21   | 31  | 33   |
| MAX II    | 21   | 31  | 33   | 21   | 31  | 33   |
| WALK      |      | 7   | 7    |      | 7   | 7    |
| PED CLEAR |      | 9   | 11   |      | 9   | 11   |
| RECALL    | NONE | MIN | NONE | NONE | MIN | NONE |
| MEMORY    | OFF  | ON  | OFF  | OFF  | ON  | OFF  |

### PREEMPT CHANNELS

- CHANNEL 1 = #2 (EASTBOUND ONLY)
- CHANNEL 2 = #2 (WESTBOUND ONLY)
- CHANNEL 3 = #4 (NORTHBOUND ONLY)
- CHANNEL 4 = #4 (SOUTHBOUND ONLY)

#### PREEMPT NOTES:

1. ACTIVE WALK INDICATIONS SHALL IMMEDIATELY GO TO "DON'T WALK" UPON RECEIVING PREEMPT SIGNAL.
2. IF PHASE ACTIVE CONFLICTS WITH PREEMPT PHASE CALLED, IT SHALL IMMEDIATELY TIME ITS YELLOW AND ALL RED CLEARANCES.
3. IF ACTIVE PHASE = THE PREEMPT PHASE, THEN THE PHASE SHALL HOLD FOR THE DURATION OF THE PREEMPT SIGNAL.
4. AFTER RELEASE FROM PREEMPT, YELLOW AND ALL RED CLEARANCE SHALL BE DISPLAYED AND RETURN PHASE SHALL BE #2.
5. IF PREEMPT PHASES = RETURN PHASE #2 THEN YELLOW AND ALL RED CLEARANCE AFTER PREEMPT SHALL NOT BE DISPLAYED.

### LOOP DETECTOR CHART

| LOOP # | SIZE        | # TURNS | MODE     | DELAY | AMP # | PHASE     |
|--------|-------------|---------|----------|-------|-------|-----------|
| L1     | 1.8m x 9.1m | 2       | PRESENCE | 8     | 1     | 8         |
| L2     | 1.8m x 9.1m | 2       | PRESENCE | 2     | 2     | 4         |
| L3     | 1.8m x 7.6m | 2       | PRESENCE | 2     | 3     | CALL #5   |
| L4     | 1.8m x 7.6m | 2       | PRESENCE | 2     | 4     | CALL #1   |
| L5     | 1.8m x 4.0m | 3       | PRESENCE | 0     | 5     | EXTEND #1 |
| L6     | 1.8m x 4.0m | 3       | PRESENCE | 0     | 6     | EXTEND #5 |
| S7     | 1.8m x 1.8m | 3       | PRESENCE |       | 7     | SYSTEM    |
| S8     | 1.8m x 1.8m | 3       | PRESENCE |       | 8     | SYSTEM    |
| S9     | 1.8m x 1.8m | 3       | PRESENCE |       | 9     | SYSTEM    |
| S10    | 1.8m x 1.8m | 3       | PRESENCE |       | 10    | SYSTEM    |

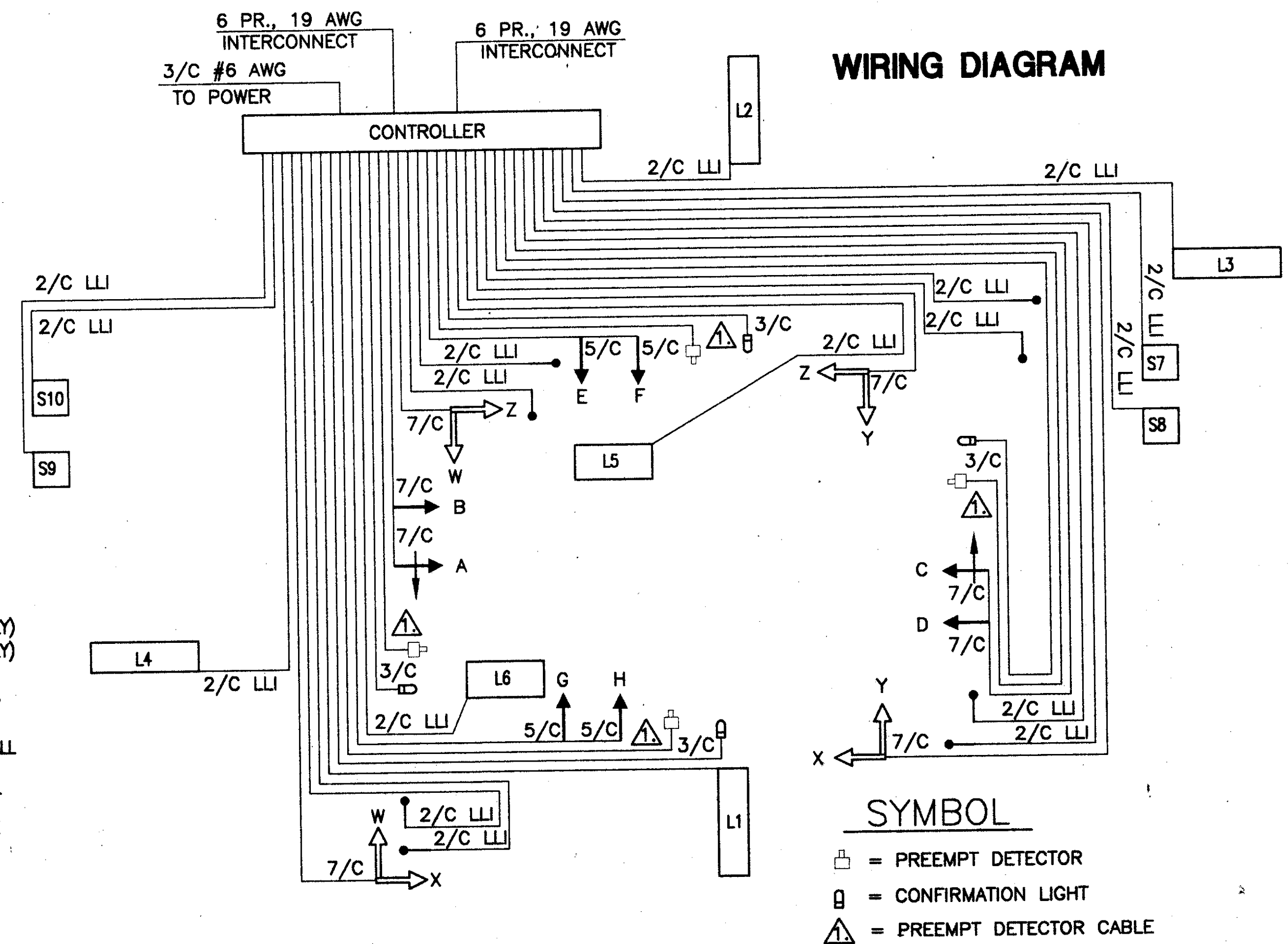
### COORDINATION TIMING

|                      | DIAL 1          | DIAL 2                     | DIAL 3                     |
|----------------------|-----------------|----------------------------|----------------------------|
| CYCLE LENGTH         | 95 SEC.         | 100 SEC.                   | 95 SEC.                    |
| PHASE 1 SPLIT        | 25%             | 26%                        | 24%                        |
| PHASE 2 SPLIT        | 37%             | 36%                        | 35%                        |
| PHASE 4 SPLIT        | 38%             | 38%                        | 41%                        |
| PHASE 5 SPLIT        | 25%             | 26%                        | 24%                        |
| PHASE 6 SPLIT        | 37%             | 36%                        | 35%                        |
| PHASE 8 SPLIT        | 38%             | 38%                        | 41%                        |
| PERMISSIVE           | 5%              | 5%                         | 5%                         |
| OFFSET               | 3%              | 2%                         | 91%                        |
| TIME OF DAY SCHEDULE | ALL OTHER TIMES | 6:30 AM TO 9:00 AM MON-SAT | 3:30 PM TO 6:30 PM MON-SAT |

#### NOTES:

1. PHASE SPLITS SHALL INCLUDE ALL GREEN PLUS YELLOW & ALL RED
2. PERMISSIVES SHALL START AT THE ZERO POINT OF THE CYCLE
3. OFFSETS SHALL BE REFERENCED TO THE BEGINNING OF PHASE 2 & 6 YELLOW

### WIRING DIAGRAM



CALCULATED CHECKED  
 TRAFFIC CONTROL PLAN  
 RICHMOND STREET & JACKSON STREET  
 LAKE COUNTY  
 LAK-20-22-916/VARIOUS  
 51  
 111