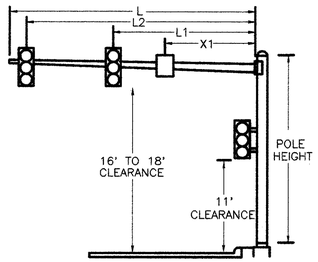
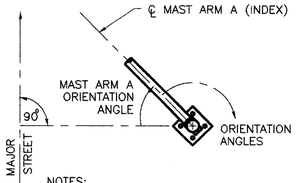
| CALC. BY: DATE: | LAKE COUNTY LAK-91-4.56 | OHIO |
|---|---|---|
| CHKD. BY: DATE: | | FHWA REGION 5 |
| | | FEDERAL PROJECT |

25
56

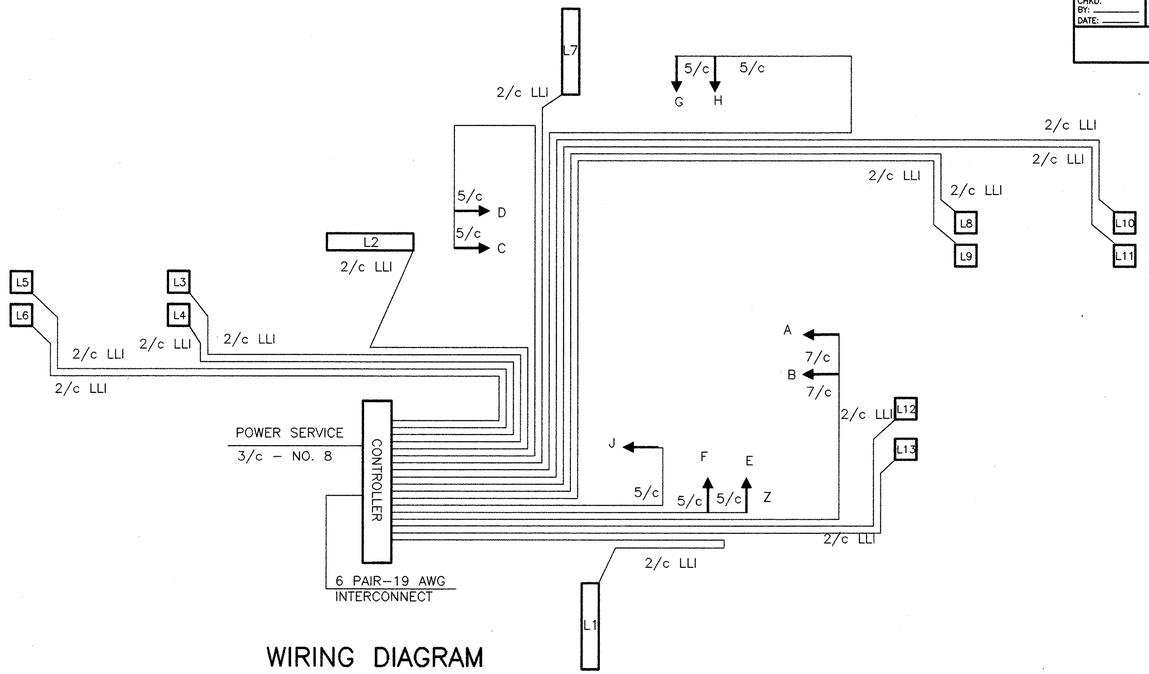


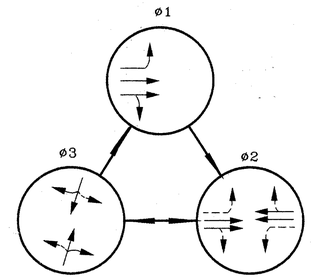

NOTES:
1. ALL ANGLES MEASURED CLOCKWISE.
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A (LARGEST ARM) EVEN IF SUPPORT HAS TWO MAST ARMS.

| SUPPORT NO. | SIGNAL SUPPORT TC-81.20 TC-12.30 | | | | | | | | | | | MAST ARM A ANGLE (DEG.) | ORIENTATION ANGLES (DEG.) FROM MAST ARM "A" | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | POLE DESIGN NO. | | ARM DESIGN NO. | POLE HEIGHT (FT) | FOUNDATION | | L | L 1 | L 2 | L 3 | X 1 | | MAST ARM B | PEDESTRIAN SIGNALS | PEDESTRIAN PUSH BUTTONS | POWER SERVICE | CONTROLLER | LUMINAIRE BRACKET | HANDHOLE | CABLE ENTRANCE (12" FROM TOP) | VEHICULAR SIGNAL HEAD | R-72E SIGN |
| | TC-81.20 | TC-12.30 | | | STATION | OFFSET | (FT.) | (FT.) | (FT.) | (FT.) | (FT.) | | | | | | | | | | | |
| P1 | 11 | | | 23' | 289+93 | 50'R | 42 | 22 | 41 | | | 0 | | | | | | | 180 | | | 0 |
| P2 | 3 | | | 21' | 289+03 | 63'R | 32 | 21 | 31 | | | 120 | | | | 90 | 180 | | 180 | | | 270 |
| P3 | SIG | | | 8' | 288+92 | 52'R | | | | | | 0 | | | | | | | 180 | | 0 | |
| P4 | 11 | | | 21' | 289+22 | 52'L | 43 | 23 | 42 | | | 0 | | | | | | | 180 | | | |
| P5 | 4 | | | 23' | 290+19 | 64'L | 35 | 24 | 34 | | | 110 | | | | | | | 180 | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

ORIENTATION ANGLE CHART




WIRING DIAGRAM




PHASING DIAGRAM

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 1 YELLOW

| | DIAL 1 | DIAL 2 | DIAL 3 |
|---|---|---|---|
| CYCLE LENGTH | 80 SEC | 100 SEC | 90 SEC |
| PHASE 1 SPLIT | 17 % | 14 % | 16 % |
| PHASE 2 SPLIT | 61 % | 55 % | 66 % |
| PHASE 3 SPLIT | 22 % | 31 % | 18 % |
| PERMISSIVE | 10 % | 10 % | 10 % |
| OFFSET | 11 % | 26 % | 23 % |
| TIME OF DAY SCHEDULE | ALL OTHER TIMES | 6:30AM TO 2:30PM<br>6:30PM TO 9:00PM<br>MON–SAT | 2:30PM TO 6:30PM MON–SAT |

COORDINATION TIMING

| SIGNAL HEAD | ø1 | | | ø2 | | | ø3 | | | FLASH |
|---|---|---|---|---|---|---|---|---|---|---|
| | R/W | CLEAR | | R/W | CLEAR | | R/W | CLEAR | | |
| A | ~~G~~/G | ~~G~~/G | G | G | Y | R | R | R | R | Y |
| B | G | G | G | G | Y | R | R | R | R | Y |
| C | R | R | R | G | Y | R | R | R | R | Y |
| D | R | R | R | G | Y | R | R | R | R | Y |
| E | R | R | R | R | R | R | G | Y | R | R |
| F | R | R | R | R | R | R | G | Y | R | R |
| G | R | R | R | R | R | R | G | Y | R | R |
| H | R | R | R | R | R | R | G | Y | R | R |
| J | G | Y | R | G | Y | R | R | R | R | Y |

SIGNAL DISPLAY CHART

| FUNCTION | ø1 | ø2 | ø3 |
|---|---|---|---|
| MINIMUM GREEN | 7 | 22 | 8 |
| PED WALK | – | – | – |
| PED CLEARANCE | – | – | – |
| GREEN EXTENSION | 2.5 | 3.0 | 3.0 |
| MAXIMUM GREEN | 9 | 53 | 26 |
| YELLOW CLEARANCE | 4.5 | 4.5 | 3.4 |
| ALL RED CLEARANCE | 1.0 | 1.0 | 1.9 |
| RECALL | NONE | MIN | NONE |

SIGNAL TIMING

| LOOP # | SIZE | # TURNS | MODE | DELAY | UNIT # | PHASE |
|---|---|---|---|---|---|---|
| L1 | 6' x 40' | 2 | PRESENCE | 8 | 1 | 3 |
| L2 | 6' x 40' | 2 | PRESENCE | 0 | 2 | 1 |
| L3 | 6' x 6' | 3 | PRESENCE | 0 | 3 | 2 |
| L4 | 6' x 6' | 3 | PRESENCE | 0 | 4 | 2 |
| L5 | 6' x 6' | 3 | PRESENCE | 0 | 5 | 2 |
| L6 | 6' x 6' | 3 | PRESENCE | 0 | 6 | 2 |
| L7 | 6' x 40' | 2 | PRESENCE | 8 | 7 | 3 |
| L8 | 6' x 6' | 3 | PRESENCE | 0 | 8 | 2 |
| L9 | 6' x 6' | 3 | PRESENCE | 0 | 9 | 2 |
| L10 | 6' x 6' | 3 | PRESENCE | 0 | 10 | 2 |
| L11 | 6' x 6' | 3 | PRESENCE | 0 | 11 | 2 |
| L12 | 6' x 6' | 3 | PRESENCE | 0 | 12 | SYSTEM |
| L13 | 6' x 6' | 3 | PRESENCE | 0 | 13 | SYSTEM |

LOOP DETECTOR CHART

| ITEM | TOTAL | UNIT | DESCRIPTION |
|---|---|---|---|
| 625 | 5 | EACH | GROUND ROD |
| 625 | 8 | EACH | PULLBOX, 18", AS PER PLAN |
| 625 | 1 | EACH | PULLBOX, 24", AS PER PLAN |
| 625 | 836 | LIN FT | CONDUIT, 2", 713.04 |
| 625 | 54 | LIN FT | CONDUIT, 3", 713.04 |
| 625 | 260 | LIN FT | CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 3" |
| 625 | 891 | LIN FT | TRENCH |
| 630 | 26 | LIN FT | GROUND MOUNTED SUPPORT, NO. 2 POST |
| 630 | 9.0 | SQ FT | SIGN, FLAT SHEET, TYPE G |
| 630 | 2 | SQ FT | SIGN SUPPORT ASSEMBLY, POLE MOUNTED |
| 632 | 8 | EACH | VEHICULAR SIGNAL HEAD, 3 SECT., 12" LENS, 1 WAY, AS PER PLAN |
| 632 | 1 | EACH | VEHICULAR SIGNAL HEAD, 5 SECT., 12" LENS, 1 WAY, AS PER PLAN |
| 632 | 11 | EACH | LOOP DETECTOR UNIT, AS PER PLAN |
| 632 | 2 | EACH | LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN |
| 632 | 10.10 | CU YD | CONCRETE FOR ANCHOR BASE FOUNDATIONS |
| 632 | 1 | EACH | SIGNAL SUPPORT, TYPE TC–81.20, DES. 3, WITH 32' ARM |
| 632 | 1 | EACH | SIGNAL SUPPORT, TYPE TC–81.20, DES. 4, WITH 35' ARM |
| 632 | 1 | EACH | SIGNAL SUPPORT, TYPE TC–81.20, DES. 11, WITH 42' ARM |
| 632 | 1 | EACH | SIGNAL SUPPORT, TYPE TC–81.20, DES. 11, WITH 43' ARM |
| 632 | 1 | EACH | PEDESTAL, 8', TRANSFORMER BASE |
| 632 | 4 | EACH | CABLE SUPPORT ASSEMBLY |
| 632 | 692 | LIN FT | LOOP DETECTOR PAVEMENT CUTTING |
| 632 | 905 | LIN FT | SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG |
| 632 | 206 | LIN FT | SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG |
| 632 | 2002 | LIN FT | LOOP DETECTOR WIRE, TYPE E |
| 632 | 3930 | LIN FT | LOOP DETECTOR LEAD–IN CABLE |
| 632 | 81 | LIN FT | POWER CABLE, 3 CONDUCTOR, NO. 8 AWG |
| 632 | 1 | EACH | POWER SERVICE, AS PER PLAN |
| 632 | 9 | EACH | COVERING OF VEHICULAR SIGNAL HEADS |
| 632 | 1 | EACH | REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN |
| | | | |
| 633 | 8.33 | SQ FT | CONTROLLER WORK PAD |
| 633 | 1 | EACH | CONTROLLER, ACTUATED, 3 PHASE, SOLID–STATE DIGITAL, MICROPROCESSOR, AS PER PLAN |

REVISED 11-29-94

S.R. 91 & STEVENS BLVD. TRAFFIC CONTROL PLAN