| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| HS-2005K | Sig. 1.1 |

## 16 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

*(remove jumpers and set switches as shown)*

REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = DENOTES POSITION OF SWITCH

## NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 9,10, 11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Program controller to start up in phases 2 and 6 green.
4. Enable simultaneous gap-out feature for all phases.
5. Program phases 2 and 6 for volume density operation.
6. The cabinet and controller are part of the Raleigh Signal System.

## EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332
SOFTWARE.....SE-PAC2070
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...12
LOAD SWITCHES USED.....S1,S2,S2P,S3,S4,S4P,S5,S6,S6P,S7,S8,S8P
PHASES USED.....1,2,3,4,5,6,7,8,2 PED,4 PED,6 PED,8 PED
OVERLAPS.....NONE

## SIGNAL HEAD HOOK-UP CHART

| LOAD SWITCH NO. | S1 | S2 | S2P | S3 | S4 | S4P | S5 | S6 | S6P | S7 | S8 | S8P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE | 1 | 2 | 2 PED | 3 | 4 | 4 PED | 5 | 6 | 6 PED | 7 | 8 | 8 PED |
| SIGNAL HEAD NO. | 11,12 | 21,22 23 | P21, P22 | 31 | 41,42 | P41, P42 | 51,52 | 61,62 63 | P61, P62 | 71,72 | 81,82 | P81, P82 |
| RED | | 128 | | | 101 | | | 134 | | | 107 | |
| YELLOW | | 129 | | | 102 | | | 135 | | | 108 | |
| GREEN | | 130 | | | 103 | | | 136 | | | 109 | |
| RED ARROW | 125 | | | 116 | | | 131 | | | 122 | | |
| YELLOW ARROW | 126 | | | 117 | | | 132 | | | 123 | | |
| GREEN ARROW | 127 | | | 118 | | | 133 | | | 124 | | |
| ✋ | | | 113 | | | 104 | | | 119 | | | 110 |
| 🚶 | | | 115 | | | 106 | | | 121 | | | 112 |

NU = Not Used

## ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that points in both directions of travel shall be installed if the median separates two parallel crosswalks.

## INPUT FILE POSITION LAYOUT

*(front view)*

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FILE "I" | U | Ø1 1A | Ø1 1B | Ø2 2A,2B | SLOT EMPTY | Ø3 3A | Ø4 4A, 4B,4C | Ø4 4E | SLOT EMPTY | SLOT EMPTY | SLOT EMPTY | SLOT EMPTY | Ø2 PED DC ISOLATOR | Ø6 PED DC ISOLATOR | FS DC ISOLATOR |
| | L | NOT USED | NOT USED | Ø2 2C,2D | | NOT USED | Ø4 4D | NOT USED | | | | | Ø4 PED DC ISOLATOR | Ø8 PED DC ISOLATOR | ST DC ISOLATOR |
| FILE "J" | U | Ø5 5A | Ø5 5B | Ø6 6A,6B | SLOT EMPTY | SLOT EMPTY | Ø7 7A | Ø8 8A, 8B,8C | Ø8 8E | SLOT EMPTY | SLOT EMPTY | SLOT EMPTY | SLOT EMPTY | SLOT EMPTY | SLOT EMPTY |
| | L | NOT USED | NOT USED | Ø6 6C,6D | | | Ø7 7B | Ø8 8D | NOT USED | | | | | | |

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

## INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE | DELAY TIME | EXTEND (STRETCH) TIME |
|---|---|---|---|---|---|---|---|
| 1A | TB2-1,2 | I1U | 56 | 1 | 1 | | |
| 1B | TB2-5,6 | I2U | 39 | 3 | 1 | | |
| 2A,2B | TB2-9,10 | I3U | 63 | 5 | 2 | | |
| 2C,2D | TB2-11,12 | I3L | 76 | 6 | 2 | | |
| 3A | TB4-5,6 | I5U | 58 | 9 | 3 | | |
| 4A,4B,4C | TB4-9,10 | I6U | 41 | 11 | 4 | | 3.1 |
| 4D | TB4-11,12 | I6L | 45 | 12 | 4 | | |
| 4E | TB6-1,2 | I7U | 65 | 13 | 4 | | |
| 5A | TB3-1,2 | J1U | 55 | 19 | 5 | | |
| 5B | TB3-5,6 | J2U | 40 | 21 | 5 | | |
| 6A,6B | TB3-9,10 | J3U | 64 | 23 | 6 | | |
| 6C,6D | TB3-11,12 | J3L | 77 | 24 | 6 | | |
| 7A | TB5-9,10 | J6U | 42 | 31 | 7 | 3 | |
| 7B | TB5-11,12 | J6L | 46 | 32 | 7 | | |
| 8A,8B,8C | TB7-1,2 | J7U | 66 | 33 | 8 | | 3.1 |
| 8D | TB7-3,4 | J7L | 79 | 34 | 8 | | |
| 8E | TB7-5,6 | J8U | 50 | 35 | 8 | | |
| PED PUSH BUTTONS | | | | | | | |
| P21,P22 | TB8-4,6 | I12U | 67 | PED 2 | 2 PED | | |
| P41,P42 | TB8-5,6 | I12L | 69 | PED 4 | 4 PED | | |
| P61,P62 | TB8-7,9 | I13U | 68 | PED 6 | 6 PED | | |
| P81,P82 | TB8-8,9 | I13L | 70 | PED 8 | 8 PED | | |

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

## COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

This Electrical Detail supersedes the detail sealed on 10-13-22

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 05-0139
DESIGNED: February 2024
SEALED: 02-27-24
REVISED: N/A

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 401 (Louisburg Rd.)
at
SR 2036/2108 (N. New Hope Road)

Division 5 Wake County Raleigh

PLAN DATE: February 2024 REVIEWED BY:
PREPARED BY: James Peterson REVIEWED BY:

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH
DocuSigned by: Ryan W. Hough 02/29/2024
A30320EAA26546C3
DATE
SIG. INVENTORY NO. 05-0139

28-FEB-2024 07:28
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J Peterson