

### LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE AND TO GENERATE PREEMPT CONFIRMATION FEEDBACK

(program controller as shown below)

- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, AND 6.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

**OUTPUT REFERENCE SCHEDULE**  
USE TO INTERPRET LOGIC PROCESSOR

INPUT 33 =	Preempt 3
OUTPUT 33 =	Phase 2 Ped Yellow
OUTPUT 42 =	Overlap C Red
OUTPUT 43 =	Overlap C Yellow
OUTPUT 44 =	Overlap C Green
OUTPUT 50 =	Overlap A Red
OUTPUT 51 =	Overlap A Yellow
OUTPUT 52 =	Overlap A Green

LOGICAL I/O COMMAND #1 (+/-COMMAND#)  
IF ACTIVE PHASE #1 IS ON  
AND RED CLEAR ON PHASE #1 IS ON

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #50 ON  
SET OUTPUT ASSIGNMENT #51 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

LOGICAL I/O COMMAND #2 (+/-COMMAND#)  
IF ACTIVE PHASE #1 IS ON

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #3 (+/-COMMAND#)  
IF YELLOW ON PHASE #1 IS ON

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #51 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #4 (+/-COMMAND#)  
IF ACTIVE PHASE #5 IS ON  
AND RED CLEAR ON PHASE #5 IS ON

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #42 ON  
SET OUTPUT ASSIGNMENT #43 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).

LOGICAL I/O COMMAND #5 (+/-COMMAND#)  
IF ACTIVE PHASE #5 IS ON

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).

LOGICAL I/O COMMAND #6 (+/-COMMAND#)  
IF YELLOW ON PHASE #5 IS ON

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #43 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

LOGICAL I/O COMMAND #7 (+/-COMMAND#)  
IF INPUT ASSIGNMENT #33 IS ON  
OR ACTIVE PREEMPTION #3 IS ON

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #33 ON

PRESS '+'

NOTE: LOGIC TO TURN ON RELAY K1 TO SEND CONFIRMATION SIGNAL DURING PREEMPTION.

LOGICAL I/O COMMAND #8 (+/-COMMAND#)  
IF INPUT ASSIGNMENT #33 IS OFF  
AND ACTIVE PREEMPTION #3 IS OFF

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #33 OFF

PRESS '+'

NOTE: LOGIC TO TURN OFF RELAY K1 AND TURN OFF CONFIRMATION SIGNAL AFTER PREEMPTION HAS ENDED.

LOGIC I/O PROCESSOR PROGRAMING COMPLETE

### OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS  
PHASE: 12345678910111213141516  
VEH OVL PARENTS: XX  
VEH OVL NOT VEH:  
VEH OVL NOT PED:  
VEH OVL GRN EXT:  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW X GREEN  
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)  
FLASH YELLOW IN CONTROLLER FLASH?...Y  
GREEN EXTENSION (0-255 SEC)...0.0  
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0  
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0  
OUTPUT AS PHASE # (0=NONE, 1-16)...0.0

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS  
PHASE: 12345678910111213141516  
VEH OVL PARENTS: XX  
VEH OVL NOT VEH:  
VEH OVL NOT PED:  
VEH OVL GRN EXT:  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW X GREEN  
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)  
FLASH YELLOW IN CONTROLLER FLASH?...Y  
GREEN EXTENSION (0-255 SEC)...0.0  
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0  
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0  
OUTPUT AS PHASE # (0=NONE, 1-16)...0.0

← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

### EMERGENCY VEHICLE PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions). Press 'NEXT' twice to advance to Preemption #3.

PREEMPTION #3	SETTINGS (NEXT:1-10)
INTERVAL/TIMING	CLEAR/DWELL PHASES
GRN YEL RED	12345678910111213141516
1 255 0.0 0.0	X X
2 0 0.0 0.0	
3 0 0.0 0.0	
4 0 0.0 0.0	
5 1 0.0 0.0	X X

EXIT CALLS

OPTIONS

PRIORITY (Y/N TO SELECT) .....MED  
DELAY TIMER (0-255 SEC) .....\*  
MIN GREEN BEFORE PRE (0= DEFAULT)...1  
PED CLEAR BEFORE PRE (0= DEFAULT)...0  
YELLOW CLEAR BEFORE PRE (0= DEFAULT)...0.0  
RED CLEAR BEFORE PRE (0= DEFAULT)...0.0  
DWELL MIN TIMER (0-255 SEC) .....\*  
DWELL MAX TIMER (0=OFF,1-255MIN) .....0  
DWELL HOLD-OVER TIMER (0-255) .....0  
LATCH CALL? .....Y  
LINK TO NEXT PREEMPT? .....N  
ENABLE BACKUP PROTECTION? .....N  
HOLD CLEAR 1 PHASES DURING DELAY? .....N  
FAST GREEN FLASH DWELL PHASES? .....N  
PED CLEARANCE THROUGH YELLOW? .....N  
INHIBIT OVERLAP GREEN EXTENSION? .....N  
SERVICE DURING SOFTWARE FLASH? .....N  
REST IN RED DURING DWELL INTERVAL? ..N  
FLASH DWELL INTERVAL? .....N  
ALLOW PEDS IN DWELL INTERVAL? .....N  
RE-TIME DWELL INTERVAL? .....Y  
OVERLAPS: .....ABCDEFGHIJKLMNP  
DWELL INT FLASH YELLOW .....Y  
OMIT OVERLAPS: .....ABCDEFGHIJKLMNP

\* Denotes timing to be determined in field.

### FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- REMOVE FLASHER UNIT 2.


THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1303  
DESIGNED: January 2019  
SEALED: 02/28/2019  
REVISED: N/A

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Electrical Details - Sheet 2 of 3 - Signal Modification

**Michael Baker INTERNATIONAL**  
8000 Regency Parkway, Suite 600  
Cary, North Carolina 27518  
Phone: 919-463-5488  
NC License No: F-1084  
MBAKERINTL.COM

Prepared in the Offices of:  
  
750 N. Greenfield Pkwy, Garner, NC 27529

US 19/64/74/129  
at  
Marks Drive/  
Old Ranger Road Connector  
Division 14 Cherokee County Near Murphy  
PLAN DATE: January 2019 REVIEWED BY: Z Harris  
PREPARED BY: K M Cory REVIEWED BY:  
REVISIONS INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL  
KELLY M. CORY  
PROFESSIONAL ENGINEER  
STATE OF NORTH CAROLINA  
LICENSE NO. 038970

DocuSigned by:  
Kelly M Cory 2/28/2019  
SIGNATURE DATE  
SIG. INVENTORY NO. 14-1303