LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 2 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 4, 5, 6, 7, 8, and 9.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
 LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS ON
AND RED CLEAR ON PHASE #2  IS ON
AND YELLOW ON PHASE    #6  IS OFF

              SCROLL DOWN
THEN:
SET LOGIC FLAG         #1  ON
SET INPUT   ASSIGNMENT #61 ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG         #2 ON
```

PRESS '+'

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

```
 LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS OFF
OR  RED CLEAR ON PHASE #2  IS OFF

              SCROLL DOWN
THEN:
SET LOGIC FLAG         #1  OFF
SET INPUT   ASSIGNMENT #61 OFF
```

PRESS '+'

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

```
 LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  LOGIC FLAG         #1  IS ON
OR  INPUT   ASSIGNMENT #44 IS ON

              SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #60 ON
```

PRESS '+'

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 2 "OR" CABINET STOP TIME INPUT IS ACTIVE.

```
 LOGICAL I/O COMMAND #7  (+/-COMMAND#)
IF  LOGIC FLAG         #1  IS OFF
AND INPUT   ASSIGNMENT #44 IS OFF

              SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #60 OFF
```

PRESS '+'

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

```
 LOGICAL I/O COMMAND #8  (+/-COMMAND#)
IF  LOGIC FLAG         #2  IS ON
AND INPUT   ASSIGNMENT #43 IS OFF

              SCROLL DOWN

THEN:
SET INPUT   ASSIGNMENT #64 ON
```

PRESS '+'

NOTE: LATCHED LOGIC FLAG #2 ACTUATES PREEMPT 7 AND PLACES CONTROLLER IN FLASH.

```
 LOGICAL I/O COMMAND #9  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS OFF

              SCROLL DOWN

THEN:
SET LOGIC FLAG         #2  OFF
```

LOGIC PROGRAMMING COMPLETE

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 2 DRE APPLICATION

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

INPUT	5	= OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 2)
INPUT	43	= FLASH SENSE
INPUT	44	= CABINET CIRCUITRY STOP TIME CONTROL INPUT
INPUT	60	= STOP TIME
INPUT	61	= SPECIAL FUNCTION ALARM 1
INPUT	64	= PREEMPT 7

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #7 IS REACHED.

```
   PREEMPTION  #7  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0 ¦   X
2  15  0.0  0.0 ¦X     X
3 255  0.0  0.0 ¦ X    X
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦ X    X
EXIT CALLS      ¦
               OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                  ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW     ¦ X XX
OMIT OVERLAPS:             ¦   X
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T1
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 1 - TMP Phase I - Step 1
Electrical Detail - Sheet 3 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section — State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey C7FE51B522454FA... 10/4/2021
DATE

SIG. INVENTORY NO. 03-0585T1

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-10.4

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 6 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS). scroll to the bottom of the menu and enable ACT logic commands 10, 11, 12, 13, 14, and 15.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
  LOGICAL I/O COMMAND #10 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6  IS ON
AND RED CLEAR ON PHASE #6  IS ON
AND YELLOW ON PHASE    #1  IS OFF
AND YELLOW ON PHASE    #2  IS OFF
              SCROLL DOWN
THEN:
SET LOGIC FLAG          #3  ON
SET INPUT   ASSIGNMENT #62 ON
    DELAY FOR    30.0 SECONDS
SET LOGIC FLAG          #4  ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
  LOGICAL I/O COMMAND #11 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6  IS OFF
OR  RED CLEAR ON PHASE #6  IS OFF
              SCROLL DOWN
THEN:
SET LOGIC FLAG          #3  OFF
SET INPUT   ASSIGNMENT #62 OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
  LOGICAL I/O COMMAND #12 (+/-COMMAND#)
IF  LOGIC FLAG          #3  IS ON
OR  INPUT   ASSIGNMENT #44 IS ON
              SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58 ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 6 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
  LOGICAL I/O COMMAND #13 (+/-COMMAND#)
IF  LOGIC FLAG          #3  IS OFF
AND INPUT   ASSIGNMENT #44 IS OFF
              SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58 OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
  LOGICAL I/O COMMAND #14 (+/-COMMAND#)
IF  LOGIC FLAG          #4  IS ON
AND INPUT   ASSIGNMENT #43 IS OFF
              SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #63 ON
```

NOTE: LATCHED LOGIC FLAG #4 ACTUATES PREEMPT 8 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
  LOGICAL I/O COMMAND #15 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6  IS OFF
              SCROLL DOWN
THEN:
SET LOGIC FLAG          #4  OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 6 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. **!**

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

INPUT	6	= OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 6)
INPUT	43	= FLASH SENSE
INPUT	44	= CABINET CIRCUITRY STOP TIME CONTROL INPUT
INPUT	58	= STOP TIME
INPUT	62	= SPECIAL FUNCTION ALARM 2
INPUT	63	= PREEMPT 8

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #8 IS REACHED.

```
   PREEMPTION  #8  SETTINGS (NEXT:1-10)
INTERVAL/TIMING  |  CLEAR/DWELL PHASES
  GRN YEL  RED   |1234567891011121314151 6
1  15  0.0  0.0  |   X
2  15  0.0  0.0  |X    X
3 255  0.0  0.0  | X   X
4   0  0.0  0.0  |
5   1  0.0  0.0  | X   X
EXIT CALLS       |
          OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                | ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW   | X XX
OMIT OVERLAPS:           |   X
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T1
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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Temporary Design 1 - TMP Phase I - Step 1
Electrical Detail - Sheet 4 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
NCDOT Transportation Mobility and Safety Division, Traffic Engineering Branch, Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
CTR-E6D0A3B8F4E4... DATE

SIG. INVENTORY NO. 03-0585T1

INPUT REASSIGNMENT PROGRAMMING DETAIL

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 12 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 21, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:43  VEHICLE DETECTOR ............DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  --> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............12 ............DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:43  NOT ENABLED
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 16 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 23, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:44  VEHICLE DETECTOR ............DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  --> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............16 ............DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:44  NOT ENABLED
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T1
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 1 - TMP Phase I - Step 1
Electrical Detail - Sheet 5 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:

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at
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Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL — NORTH CAROLINA PROFESSIONAL ENGINEER — SEAL 43239 — REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T1

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-10.6

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM CABINET STOP TIME TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 44, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:82  STOP TIME                    <- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................44
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   -> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y   <- DEFAULT PROGRAMMING
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:82  NOT ENABLED
INPUT ASSIGNMENT #.................44
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 60, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED              <- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................60
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   <- DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y   -> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   STOP TIME
INPUT ASSIGNMENT #.................60
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 6

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 58, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED              <- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................58
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   <- DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y   -> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   STOP TIME
INPUT ASSIGNMENT #.................58
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 1

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 61, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED              <- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................61
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   <- DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1  -> ENTER A "1" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #.................61
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T1
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 1 - TMP Phase I - Step 1
Electrical Detail - Sheet 6 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Traffic Engineering Branch, Mobility and Safety Division, North Carolina Department of Transportation, Traffic Engineering & Safety Systems Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 9/4/2021
DATE

SIG. INVENTORY NO. 03-0585T1

11:14:47 AM
U:\Raleigh\Signals\Design\Electrical Details\Temporary Design\R3300B.sig.ele.03-0585T1.dgn
User:lhamright

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-10.7

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 62, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED
INPUT ASSIGNMENT #.................62
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........2
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

DEFAULT PROGRAMMING

DEFAULT PROGRAMMING

ENTER A "2" FOR SPECIAL FUNCTION ALARM

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #.................62
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........2
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 64, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED
INPUT ASSIGNMENT #.................64
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

DEFAULT PROGRAMMING

DEFAULT PROGRAMMING

ENTER PREEMPT 7

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.................64
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 63, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED
INPUT ASSIGNMENT #.................63
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

DEFAULT PROGRAMMING

DEFAULT PROGRAMMING

ENTER PREEMPT 8

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.................63
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T1
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Traffic Engineering Branch, Traffic Engineering Unit, Transportation Mobility and Safety Division, NC Department of Transportation, Traffic Engineering & Signals Management Section

750 N.Greenfield Pkwy.Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C1FB45B9D9334AC... DATE

SIG. INVENTORY NO. 03-0585T1

Temporary Design 1 - TMP Phase I - Step 1
Electrical Detail - Sheet 7 of 9

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User:rhornbright
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ADVANCE BEACON #1 OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #33 (PIN 35) IS REACHED.

```
PAGE:1  C1 PIN:35  NOT ENABLED
OUTPUT ASSIGNMENT #................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE IN WHICH AT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:35  NOT ENABLED
SELECT BEACON INDEX (1-4)...........1
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:35  ADVANCE BEACON
OUTPUT ASSIGNMENT #................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #34 (PIN 36) IS REACHED.

```
PAGE:1  C1 PIN:36  NOT ENABLED
OUTPUT ASSIGNMENT #................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:36  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......33
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:36  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 33 = Ø 2 Ped Yellow
OUTPUT 34 = Ø 6 Ped Yellow

ADVANCE BEACON PROGRAMMING DETAIL

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '2' (OUTPUT BEACON SETTINGS).

```
           OUTPUT BEACON SETTINGS
TRIGGER PHASES: |12345678910111213141516
BEACON #1 OFF   | X
BEACON #2 OFF   |      X
BEACON #3 OFF   |
BEACON #4 OFF   |
                BEACON |  1   2   3   4
OFF DELAY TIME (0-255)|  0   0   0   0
ON DELAY TIME  (0-255)|  0   0   0   0
STOP-TIME HOLD (0-255)|  2   2   0   0
```

SCROLL DOWN TO VIEW ALL DATA

NOTICE STOP TIME HOLD

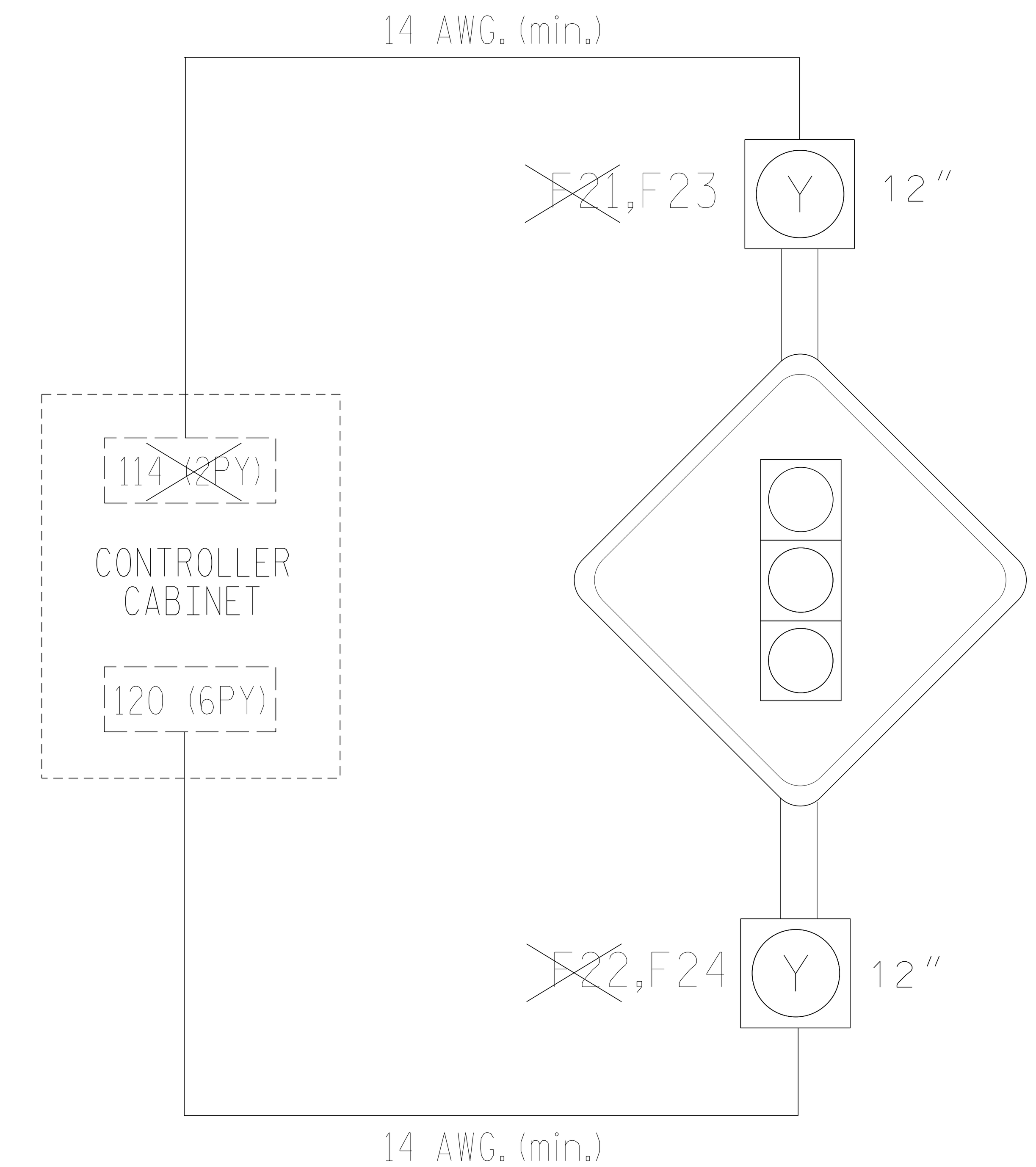
ADVANCE BEACON PROGRAMMING COMPLETE

NOTE: AN OUTPUT HAS TO BE ASSIGNED AS AN ADVANCE BEACON IN ORDER FOR PROPER OPERATION TO OCCUR. SEE OUTPUT ASSIGNMENT DETAIL ON THIS SHEET.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T1
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

ADVANCE BEACON #1 WIRING DETAIL

(wire flashers as shown below)



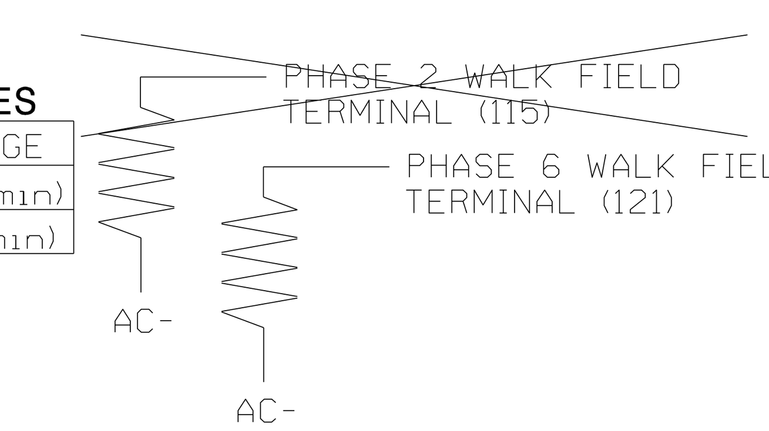
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 114 (2PY) AND TERMINAL 120 (6PY).
2. INSERT LOADSWITCH FOR S3 AND S9.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 33 AND 34 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Temporary Design 1 - TMP Phase I - Step 1
Electrical Detail - Sheet 8 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:

Transportation Mobility and Safety Division, ITS & Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3	Pender County	Near Topsail Beach	
PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL
43239
ENGINEER
REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021

SIG. INVENTORY NO. 03-0585T1

ADVANCE BEACON #2 OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS). THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #35 (PIN 37) IS REACHED.

```
PAGE:1  C1 PIN:37  NOT ENABLED
OUTPUT ASSIGNMENT #................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID.1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH. ALONG WITH THE RATE AT WHICH IT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:37  NOT ENABLED
SELECT BEACON INDEX (1-4)...........2
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA. THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:37  ADVANCE BEACON
OUTPUT ASSIGNMENT #................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID.1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

FROM MAIN MENU PRESS '6' (OUTPUTS). THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #36 (PIN 38) IS REACHED.

```
PAGE:1  C1 PIN:38  NOT ENABLED
OUTPUT ASSIGNMENT #................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID.1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:38  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......35
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA. THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

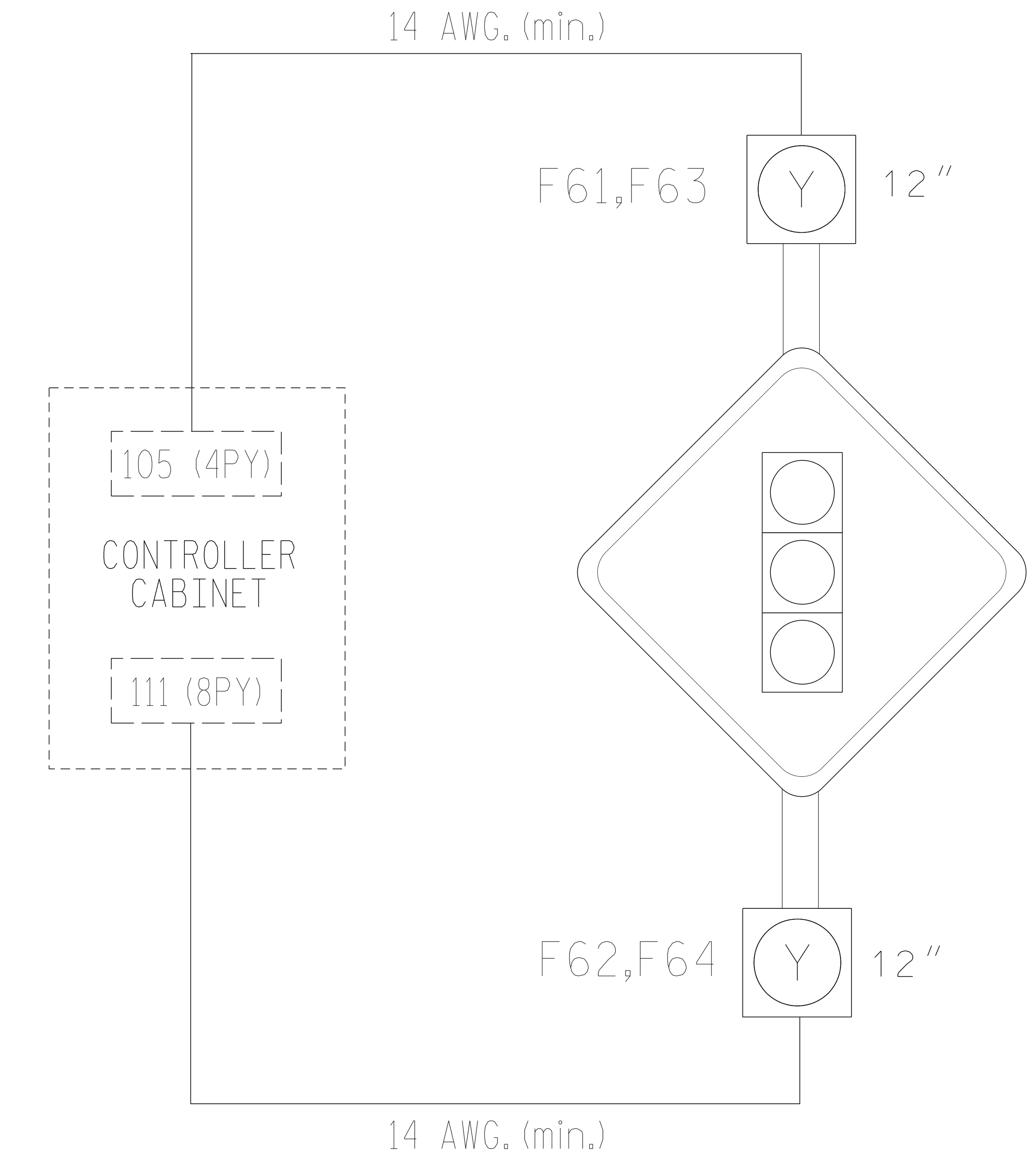
```
PAGE:1  C1 PIN:38  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID.1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 35 = Ø4 Ped Yellow
OUTPUT 36 = Ø8 Ped Yellow

ADVANCE BEACON #2 WIRING DETAIL

(wire flashers as shown below)



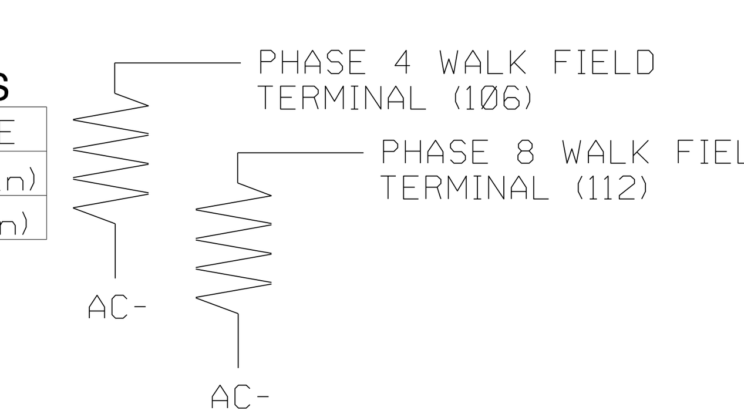
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 105 (4PY) AND TERMINAL 111 (8PY).
2. INSERT LOADSWITCH FOR S6 AND S12.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 35 AND 36 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T1
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 1 - TMP Phase I - Step 1
Electrical Detail - Sheet 9 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

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750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

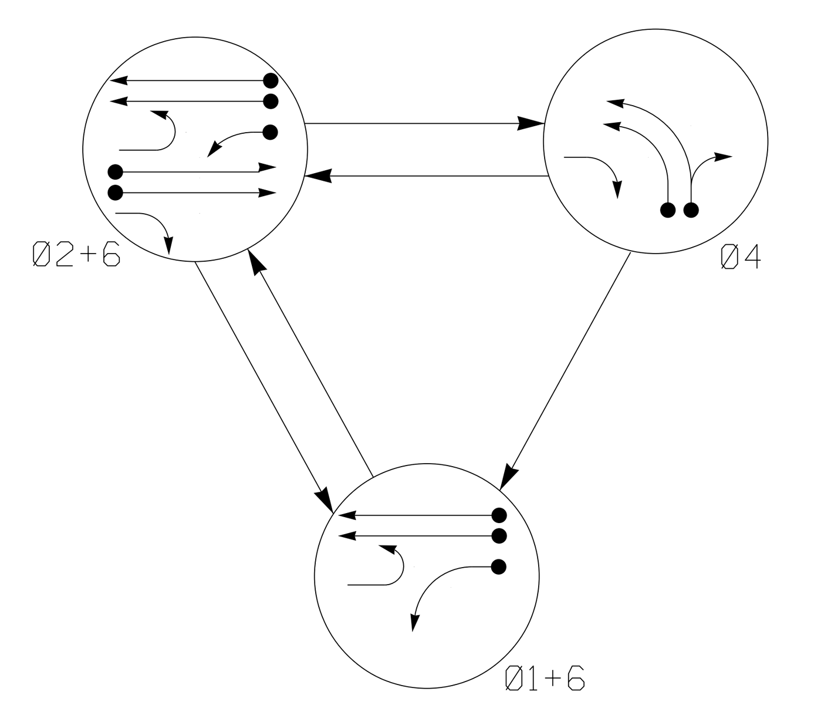
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B62854FA...
DATE

SIG. INVENTORY NO. 03-0585T1

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-11.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

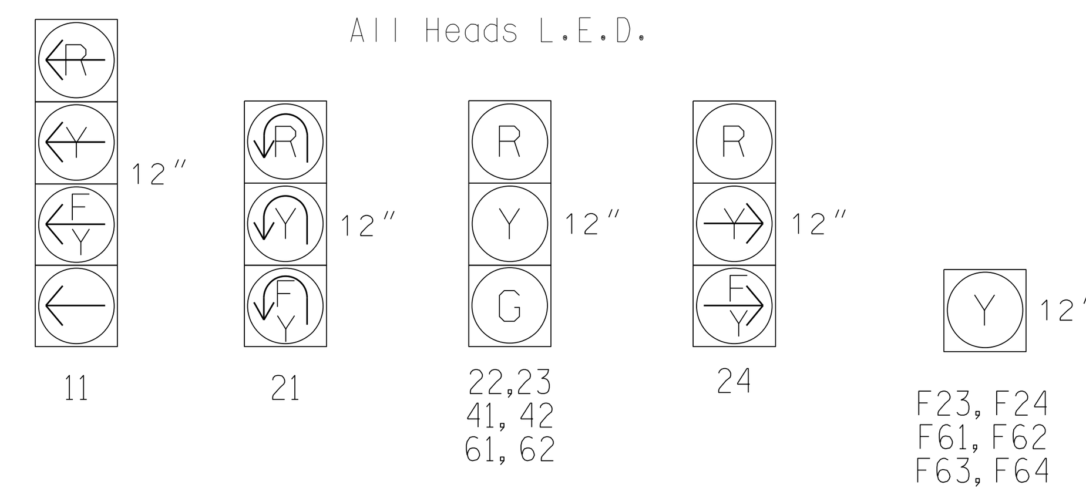
SIGNAL FACE	PHASE Ø1+6	Ø2+6	Ø4	Pre 7/8 CLEAR 1	Pre 7/8 CLEAR 2	Pre 7/8 DWELL	FLASH
11	←	F/Y ←	←R	←R	←	←Y	←Y
21	F/Y	F/Y	R	R	R	Y	Y
22, 23	R	G	R	R	R	Y	Y
24	R	F/Y →	F/Y →	F/Y →	R	Y→	Y→
41, 42	R	R	G	G	R	R	R
61, 62	G	G	R	R	G	Y	Y

TABLE OF OPERATION

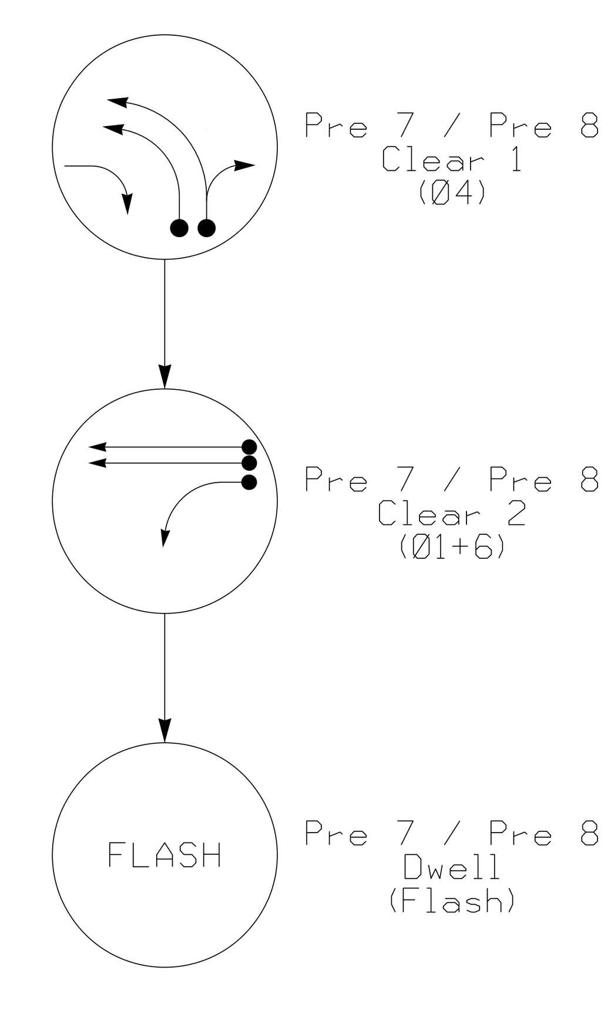
SIGNAL FACE	INTERVAL 1	2
F23	ON	OFF
F24	OFF	ON
F61, F63	ON	OFF
F62, F64	OFF	ON

SIGNAL FACE I.D.

All Heads L.E.D.



DRE FAILURE PREEMPT



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

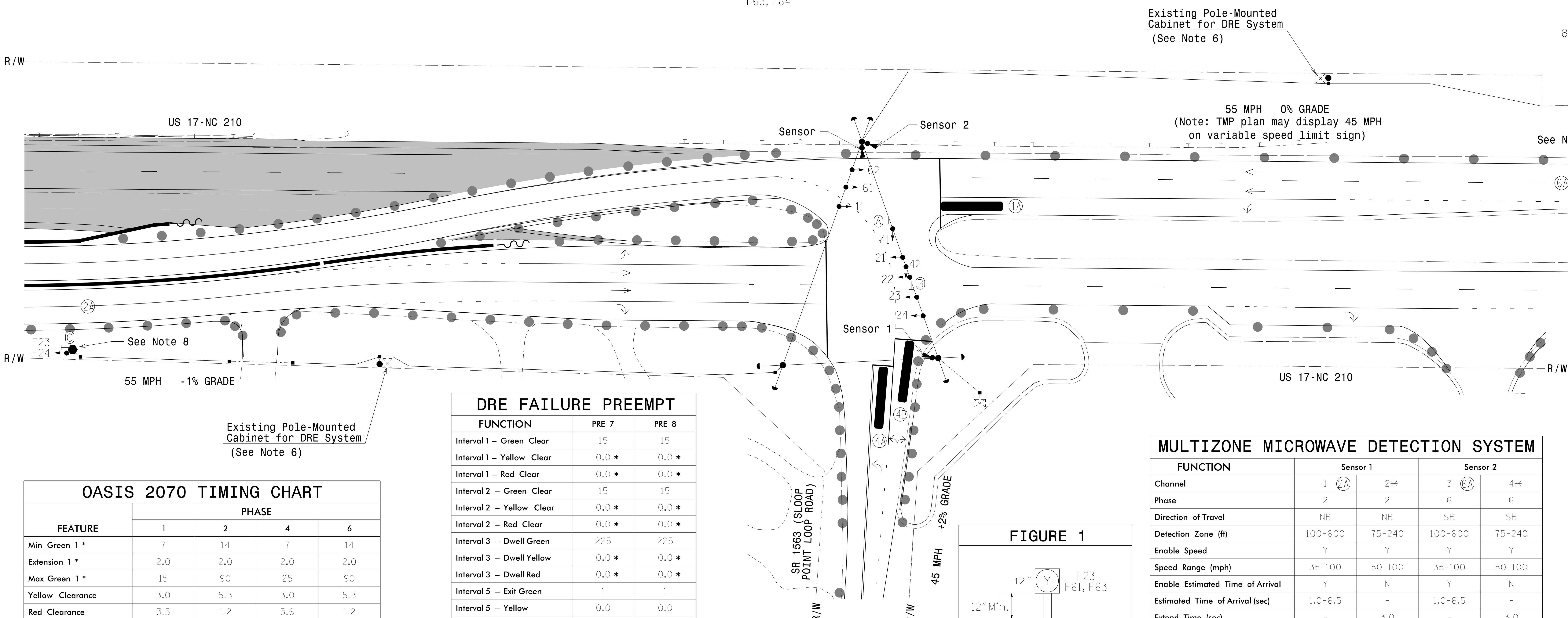
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	✳	✳	1	Y	Y	-	-	15	-	✳
					6	Y	Y	Y	-	3	-	✳
4A	6X40	0	✳	✳	4	Y	Y	-	-	3	-	✳
4B	6X40	0	✳	✳	4	Y	Y	-	-	10	-	✳

✳ Multizone Microwave Detection Area
Multizone microwave detector unit locations should be confirmed in the field by the contractor in order to provide detection of the areas indicated.

3 Phase Fully Actuated (Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Phase 1 may be lagged.
5. Flash beacons 3 seconds prior to end of phase 2 or 6 green.
6. Contractor shall maintain DRE system and signal ahead flashers during all phases of construction.
7. This intersection features a multizone microwave detection system. Shown locations of detectors are conceptual only. Detectors should be placed to ensure the desired operation parameters are achieved.
8. Install sign W3-3 in advance of the flasher beacon. See TMP plan for sign location.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Detection Area	N/A
	Type III Signal Pedestal	
	Construction Zone	N/A
	Drums	N/A
(A)	Left Arrow "ONLY" Sign (R3-5L)	(A)
(B)	Combined Left and Right Arrow Sign (R3-6)	(B)
(C)	"Be Prepared to Stop" Sign (W3-4 with W16-13p) (See Figure 1)	(C)
	Out of Pavement Detector	

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	4	6
Min Green 1 *	7	14	7	14
Extension 1 *	2.0	2.0	2.0	2.0
Max Green 1 *	15	90	25	90
Yellow Clearance	3.0	5.3	3.0	5.3
Red Clearance	3.3	1.2	3.6	1.2
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	-	-	-	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

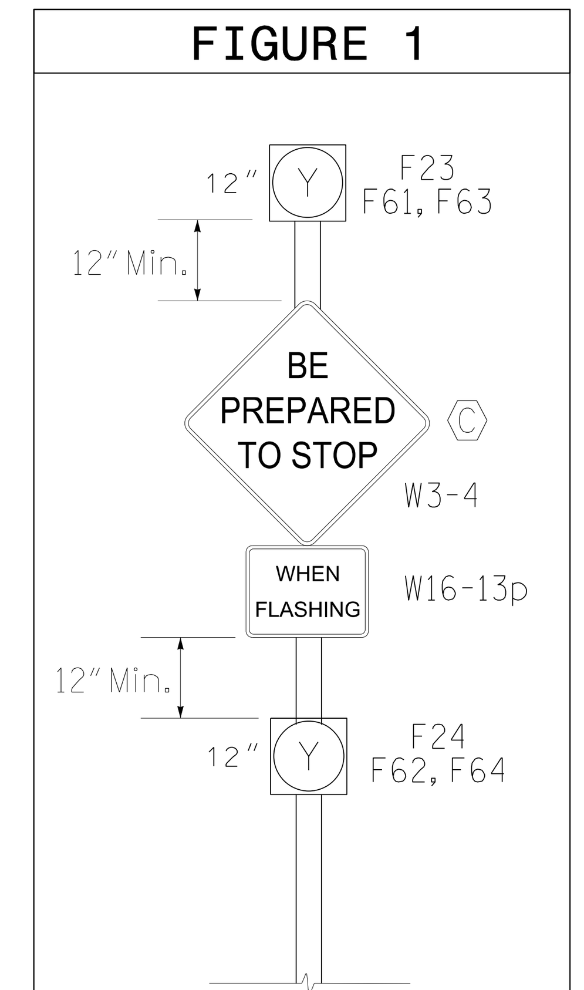
* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

DRE FAILURE PREEMPT

FUNCTION	PRE 7	PRE 8
Interval 1 – Green Clear	15	15
Interval 1 – Yellow Clear	0.0 *	0.0 *
Interval 1 – Red Clear	0.0 *	0.0 *
Interval 2 – Green Clear	15	15
Interval 2 – Yellow Clear	0.0 *	0.0 *
Interval 2 – Red Clear	0.0 *	0.0 *
Interval 3 – Dwell Green	225	225
Interval 3 – Dwell Yellow	0.0 *	0.0 *
Interval 3 – Dwell Red	0.0 *	0.0 *
Interval 5 – Exit Green	1	1
Interval 5 – Yellow	0.0	0.0
Interval 5– Red	0.0	0.0
Exit Phase(s)	2, 6	2, 6
Priority	High	High
Delay Time	0	0
Minimum Green Before Pre	20	20
Ped Clear Before Pre	0	0
Yellow Clear Before Pre	0.0 *	0.0 *
Red Clear Before Pre	0.0 *	0.0 *
Dwell Min Time	20	20
Flash Dwell Interval?	Y	Y
Enable Backup Protection	N	N
Ped Clear Through Yellow	N	N
Omit Overlaps	C	C

* Time defaults to time used for phase during normal operation.

FIGURE 1



MULTIZONE MICROWAVE DETECTION SYSTEM

FUNCTION	Sensor 1		Sensor 2	
Channel	1 (2A)	2✳	3 (6A)	4✳
Phase	2	2	6	6
Direction of Travel	NB	NB	SB	SB
Detection Zone (ft)	100-600	75-240	100-600	75-240
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	50-100	35-100	50-100
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	1.0-6.5	-	1.0-6.5	-
Extend Time (sec)	-	3.0	-	3.0

✳ If output is present during associated phase's red clear, a minimum 3 second stop time willbe placed on the red clearance interval.

Signal Upgrade
Temporary Design 2 - TMP Phase I - Step 2

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Prepared for the Offices of:
Transportation Mobility and Safety Division – State of North Carolina Department of Transportation – Signal Design Section
750 N.Greenfield Pkwy, Garner, NC 27529

SCALE 0 40 — 1" = 40'

US 17-NC 210 at SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	D Harris
PREPARED BY:	J Hambright	REVIEWED BY:	R M Muncey

REVISIONS	INIT.	DATE

North Carolina Professional Engineer Seal 43239 Regina M. Muncey

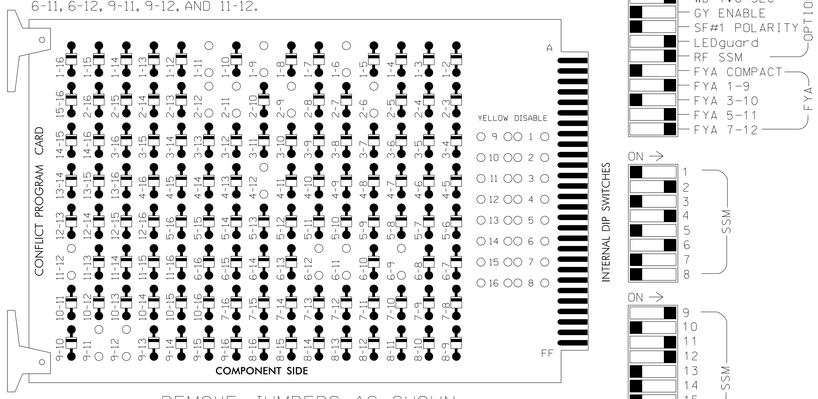
DocuSigned by: Regina M. Muncey 4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T2

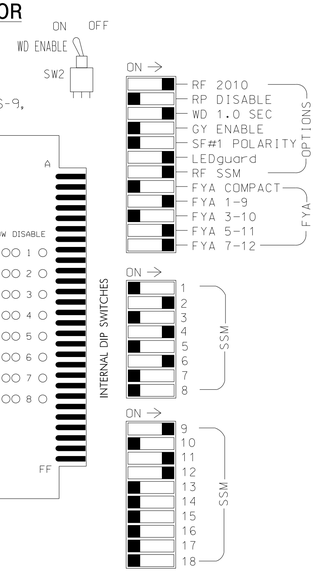
EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-6, 1-9, 1-11, 2-6, 2-9, 2-11, 2-12, 4-12, 6-9, 6-11, 6-12, 9-11, 9-12, AND 11-12.



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. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

■ = 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. Enable Simultaneous Gap-Out for all Phases.
3. Program phases 2 and 6 for Startup In Green.
4. Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
5. If this signal will be managed by an ATMS software, enable controller and detector logging for all enabled detectors.
6. The cabinet and controller are part of the US 17 - NC 210 (Topsail) CLS. Signal System #10324.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3✱,S5,S6✱,S8,S9✱, S12✱,AUX S1,AUX S4,AUX S5
PHASES USED.....1,2,4,6
OVERLAP "A".....1+2
OVERLAP "B".....NOT USED
OVERLAP "C".....6
OVERLAP "D".....2+4
✱ Used for Advance Beacon only

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-11.1

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3		S4	S5	S6		S7	S8	S9		S10	S11	S12		AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13		3	4	14		5	6	15		7	8	16		9	10	17	11	12	18
PHASE	1	2	2 PED	ADVANCE BEACON	3	4	4 PED	ADVANCE BEACON	5	6	6 PED	ADVANCE BEACON	7	8	8 PED	ADVANCE BEACON	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11 ★	22,23	NU	~~F21~~ ~~F23~~	NU	41,42	NU	F61 F63	NU	61,62	NU	F22 F24	NU	NU	NU	F62 F64	11 ★	NU	NU	21 ★	24 ★	NU
RED		128				101				134											A101	
YELLOW	✱	129				102				135												
GREEN		130				103				136												
RED ARROW																	A121			A114		
YELLOW ARROW																	A122			A115	A102	
FLASHING YELLOW ARROW																	A123			A116	A103	
GREEN ARROW	127																					
PED YELLOW				~~✱✱~~ ~~114~~			✱✱ 105				✱✱ 120				✱✱ 111							
			~~✱~~				✱				✱				✱							

NU = Not Used

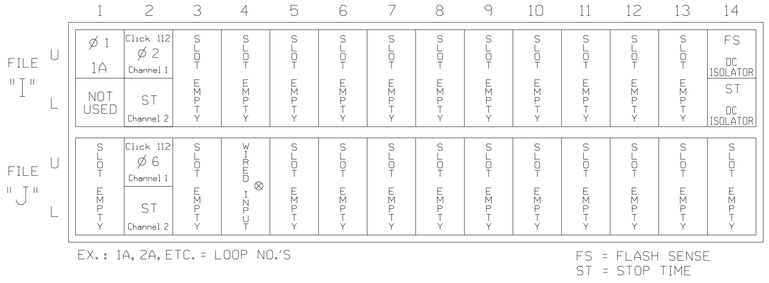
✱ Denotes install load resistor. See load resistor installation details sheets 1, 8, and 9.

✱✱ Special advance beacons will be wired to ~~S3Y~~, S6Y, S9Y, and S12Y. See wiring and programming details on sheets 8 and 9 of this electrical detail.

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



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.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	✱✱	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y	Y		3

✱✱ Multizone Microwave Detection Zone. See Special Detector Note.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

SPECIAL DETECTOR NOTE

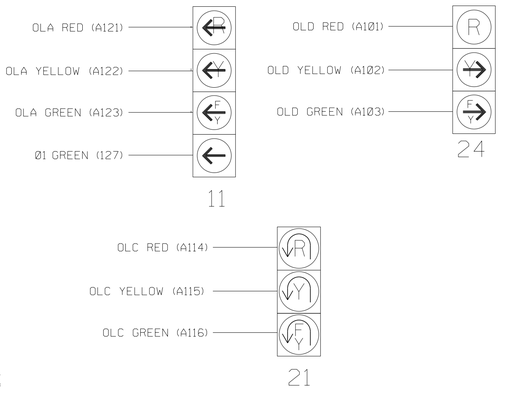
Install a Multizone Microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For Detection Zone 1A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

For the phase 2 and 6 approaches, install an advance detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal head 11 requires special logic programming. See sheet 2 for programming instructions.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 1 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE: October 2021 REVIEWED BY: E D Harris
PREPARED BY: R M Muncey REVIEWED BY: L E Overn

REVISIONS	INIT.	DATE

Prepared for the Offices of:
Traffic Engineering Branch, Mobility and Safety Division, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE5D3B3274AFA... DATE

SIG. INVENTORY NO. 03-0585T2

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-11.2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. 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, AND 3.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
  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
```

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

PRESS '+'

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

                SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #52 OFF
```

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

PRESS '+'

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

                SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #51 ON
```

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

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |XX
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: | X
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).........2
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
```

PRESS '+' TWICE

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |    X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |    X
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).........2
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
```

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: | X X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: | X
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).........2
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
```

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 2 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Signals Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
SIG. INVENTORY NO. 03-0585T2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 2 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 4, 5, 6, 7, 8, and 9.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS ON
AND RED CLEAR ON PHASE #2  IS ON
AND YELLOW ON PHASE    #6  IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #1  ON
SET INPUT   ASSIGNMENT #61 ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG         #2  ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS OFF
OR  RED CLEAR ON PHASE #2  IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #1  OFF
SET INPUT   ASSIGNMENT #61 OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  LOGIC FLAG         #1  IS ON
OR  INPUT   ASSIGNMENT #44 IS ON
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #60 ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 2 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
LOGICAL I/O COMMAND #7  (+/-COMMAND#)
IF  LOGIC FLAG         #1  IS OFF
AND INPUT   ASSIGNMENT #44 IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #60 OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
LOGICAL I/O COMMAND #8  (+/-COMMAND#)
IF  LOGIC FLAG         #2  IS ON
AND INPUT   ASSIGNMENT #43 IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #64 ON
```

NOTE: LATCHED LOGIC FLAG #2 ACTUATES PREEMPT 7 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
LOGICAL I/O COMMAND #9  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #2  OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 2 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

INPUT 5	= OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 2)
INPUT 43	= FLASH SENSE
INPUT 44	= CABINET CIRCUITRY STOP TIME CONTROL INPUT
INPUT 60	= STOP TIME
INPUT 61	= SPECIAL FUNCTION ALARM 1
INPUT 64	= PREEMPT 7

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #7 IS REACHED.

```
   PREEMPTION  #7  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0 ¦   X
2  15  0.0  0.0 ¦X    X
3 255  0.0  0.0 ¦ X   X
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦ X   X
EXIT CALLS      ¦
               OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                  ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW     ¦ X XX
OMIT OVERLAPS:             ¦   X
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 3 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey C7FE51B522454FA... 10/4/2021
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 6 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 10, 11, 12, 13, 14, and 15.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #10 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS ON
AND RED CLEAR ON PHASE #6   IS ON
AND YELLOW ON PHASE    #1   IS OFF
AND YELLOW ON PHASE    #2   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #3   ON
SET INPUT   ASSIGNMENT #62 ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG         #4 ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
LOGICAL I/O COMMAND #11 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS OFF
OR  RED CLEAR ON PHASE #6   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #3   OFF
SET INPUT   ASSIGNMENT #62 OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
LOGICAL I/O COMMAND #12 (+/-COMMAND#)
IF  LOGIC FLAG         #3   IS ON
OR  INPUT   ASSIGNMENT #44 IS ON
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58 ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 6 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
LOGICAL I/O COMMAND #13 (+/-COMMAND#)
IF  LOGIC FLAG         #3   IS OFF
AND INPUT   ASSIGNMENT #44 IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58 OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
LOGICAL I/O COMMAND #14 (+/-COMMAND#)
IF  LOGIC FLAG         #4   IS ON
AND INPUT   ASSIGNMENT #43 IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #63 ON
```

NOTE: LATCHED LOGIC FLAG #4 ACTUATES PREEMPT 8 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
LOGICAL I/O COMMAND #15 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #4   OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 6 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

INPUT 6	= OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 6)
INPUT 43	= FLASH SENSE
INPUT 44	= CABINET CIRCUITRY STOP TIME CONTROL INPUT
INPUT 58	= STOP TIME
INPUT 62	= SPECIAL FUNCTION ALARM 2
INPUT 63	= PREEMPT 8

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #8 IS REACHED.

```
   PREEMPTION  #8  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0 ¦   X
2  15  0.0  0.0 ¦X    X
3 255  0.0  0.0 ¦ X   X
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦ X   X
EXIT CALLS      ¦
             OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                 ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW    ¦ X XX
OMIT OVERLAPS:            ¦   X
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 4 of 9

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US 17-NC 210
at
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Division 3	Pender County	Near Topsail Beach	
PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey
C7EE51B522454FA...
10/4/2021
DATE

SIG. INVENTORY NO. 03-0585T2

11:16:52 AM
U:\Traffic\Signals\Design\Electrical Details\Temporary Design\R3300B_sig_ele_03-0585T2.dgn
User:jhambright

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-11.5

INPUT REASSIGNMENT PROGRAMMING DETAIL

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 12 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 21, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:43  VEHICLE DETECTOR ......DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  --> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............12 ......DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:43  NOT ENABLED
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 16 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 23, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:44  VEHICLE DETECTOR ......DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  --> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............16 ......DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:44  NOT ENABLED
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 5 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division — ITS & Signals Management Section — State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7EE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T2

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM CABINET STOP TIME TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 44, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:82  STOP TIME              ····· DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................44
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  ➡ ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y  ····· DEFAULT PROGRAMMING
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT ➡

```
PAGE:1  C1 PIN:82  NOT ENABLED
INPUT ASSIGNMENT #..................44
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 60, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0  NOT ENABLED             ····· DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................60
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  ····· DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y  ➡ ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT ➡

```
PAGE:1  C1 PIN:0    STOP TIME
INPUT ASSIGNMENT #..................60
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 6

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 58, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0  NOT ENABLED             ····· DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................58
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  ····· DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y  ➡ ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT ➡

```
PAGE:1  C1 PIN:0    STOP TIME
INPUT ASSIGNMENT #..................58
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 1

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 61, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0  NOT ENABLED             ····· DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................61
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  ····· DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1  ➡ ENTER A "1" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT ➡

```
PAGE:1  C1 PIN:0  SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #..................61
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 6 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T2

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL
FROM "NOT ENABLED" TO SF ALARM 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 62, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:0   NOT ENABLED ············ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................62
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)........... 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ········ DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........2  ➜ ENTER A "2" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #..................62
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........2
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL
FROM "NOT ENABLED" TO PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 64, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:0   NOT ENABLED ············ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................64
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ········ DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................7  ➜ ENTER PREEMPT 7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #..................64
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL
FROM "NOT ENABLED" TO PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 63, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:0   NOT ENABLED ············ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................63
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)........... 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ········ DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................8  ➜ ENTER PREEMPT 8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #..................63
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 7 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division — State of North Carolina Department of Transportation — ITS & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3	Pender County	Near Topsail Beach	
PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T2

ADVANCE BEACON #1
OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #33 (PIN 35) IS REACHED.

```
PAGE:1  C1 PIN:35  NOT ENABLED
OUTPUT ASSIGNMENT #.................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH. ALONG WITH THE RATE IN WHICH AT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:35  NOT ENABLED
SELECT BEACON INDEX (1-4)..........1
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:35  ADVANCE BEACON
OUTPUT ASSIGNMENT #.................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #34 (PIN 36) IS REACHED.

```
PAGE:1  C1 PIN:36  NOT ENABLED
OUTPUT ASSIGNMENT #.................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:36  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......33
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:36  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #.................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 33 = Ø2 Ped Yellow
OUTPUT 34 = Ø6 Ped Yellow

ADVANCE BEACON PROGRAMMING DETAIL

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '2' (OUTPUT BEACON SETTINGS).

```
OUTPUT BEACON SETTINGS
TRIGGER PHASES: |12345678910111213141516
BEACON #1 OFF   | X
BEACON #2 OFF   |    X
BEACON #3 OFF   |
BEACON #4 OFF   |
                BEACON  |  1  2  3  4
OFF DELAY TIME (0-255)  |  0  0  0  0
ON DELAY TIME  (0-255)  |  0  0  0  0
STOP-TIME HOLD (0-255)  |  2  2  0  0
```

SCROLL DOWN TO VIEW ALL DATA ↓

← NOTICE STOP TIME HOLD

ADVANCE BEACON PROGRAMMING COMPLETE

NOTE: AN OUTPUT HAS TO BE ASSIGNED AS AN ADVANCE BEACON IN ORDER FOR PROPER OPERATION TO OCCUR. SEE OUTPUT ASSIGNMENT DETAIL ON THIS SHEET.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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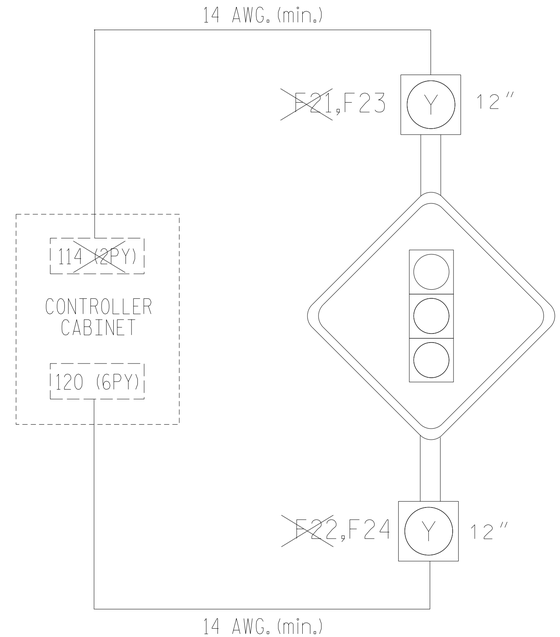
PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-11.8

ADVANCE BEACON #1 WIRING DETAIL

(wire flashers as shown below)



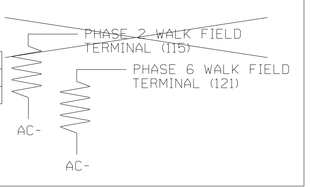
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 114 (2PY) AND TERMINAL 120 (6PY).
2. INSERT LOADSWITCH FOR ~~S4~~ AND S9.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 33 AND 34 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 8 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

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

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7E0E95B07454FB... DATE

SIG. INVENTORY NO. 03-0585T2

ADVANCE BEACON #2
OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #35 (PIN 37) IS REACHED.

```
PAGE:1  C1 PIN:37  NOT ENABLED
OUTPUT ASSIGNMENT #................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................_
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................._
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................._
PHASE ON............................_
PHASE NEXT.........................._
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE AT WHICH IT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:37  NOT ENABLED
SELECT BEACON INDEX (1-4)...........2
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:37  ADVANCE BEACON
OUTPUT ASSIGNMENT #................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED........................_
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................_
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................._
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................._
PHASE ON............................_
PHASE NEXT.........................._
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #36 (PIN 38) IS REACHED.

```
PAGE:1  C1 PIN:38  NOT ENABLED
OUTPUT ASSIGNMENT #................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON......................_
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................._
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................._
PHASE ON............................_
PHASE NEXT.........................._
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:38  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......35
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

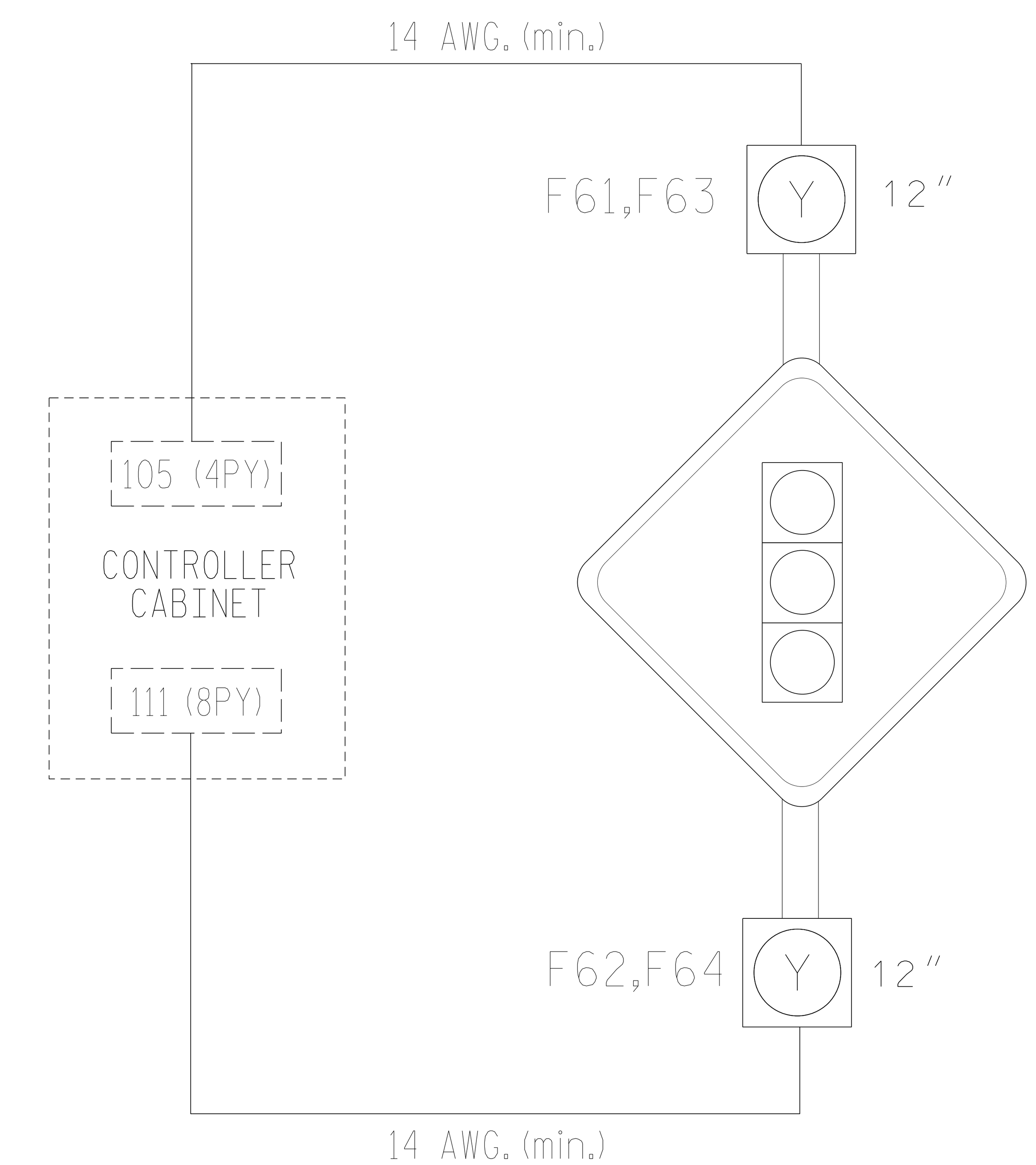
```
PAGE:1  C1 PIN:38  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED........................_
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON......................_
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................._
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................._
PHASE ON............................_
PHASE NEXT.........................._
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 35 = Ø 4 Ped Yellow
OUTPUT 36 = Ø 8 Ped Yellow

ADVANCE BEACON #2 WIRING DETAIL

(wire flashers as shown below)



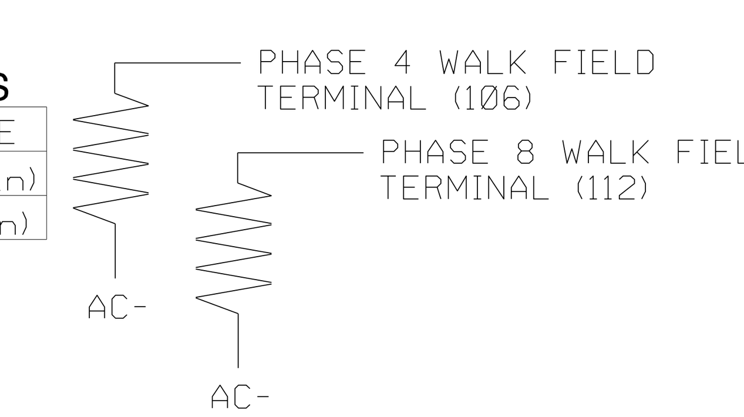
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 105 (4PY) AND TERMINAL 111 (8PY).
2. INSERT LOADSWITCH FOR S6 AND S12.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 35 AND 36 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Temporary Design 2 - TMP Phase I - Step 2
Electrical Detail - Sheet 9 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T2
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

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

US 17-NC 210
at
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Division 3 Pender County Near Topsail Beach

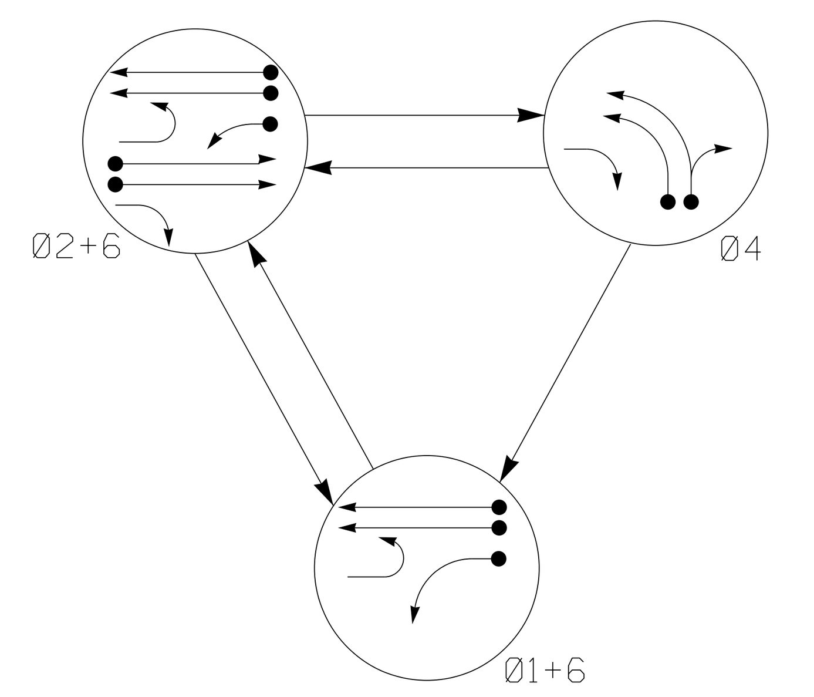
PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey C7FE51B522454FA... 10/4/2021
SIGNATURE DATE
SIG. INVENTORY NO. 03-0585T2

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-12.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

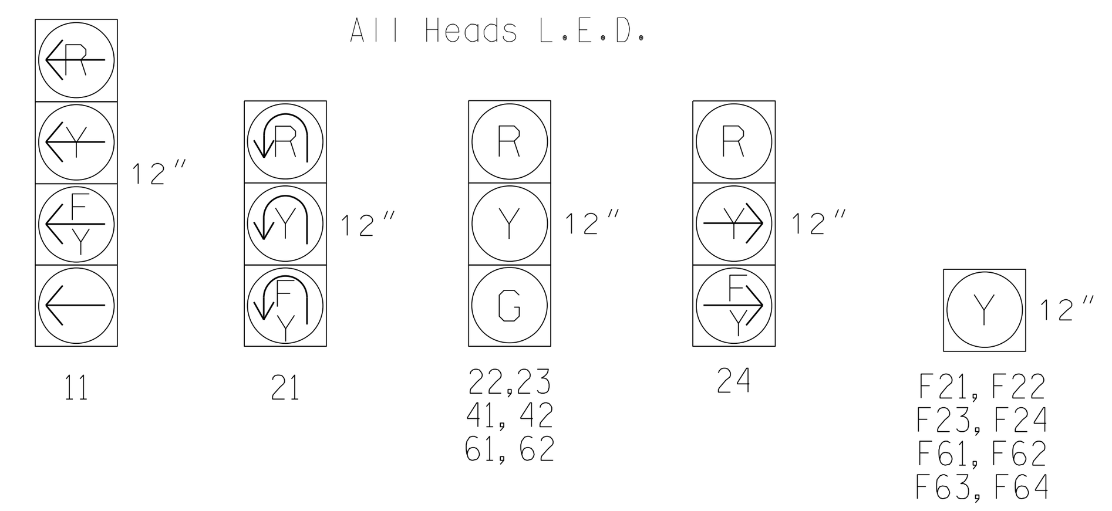
SIGNAL FACE	PHASE Ø1+6	Ø2+6	Ø4	Pre 7/8 CLEAR 1	Pre 7/8 CLEAR 2	Pre 7/8 DWELL	FLASH
11	←	F←Y	←R	←R	←	←Y	←Y
21	↶FY	↶FY	↶R	↶R	↶R	↶Y	↶Y
22, 23	R	G	R	R	R	Y	Y
24	R	F→Y	F→Y	F→Y	R	Y→	Y→
41, 42	R	R	G	G	R	R	R
61, 62	G	G	R	R	G	Y	Y

TABLE OF OPERATION

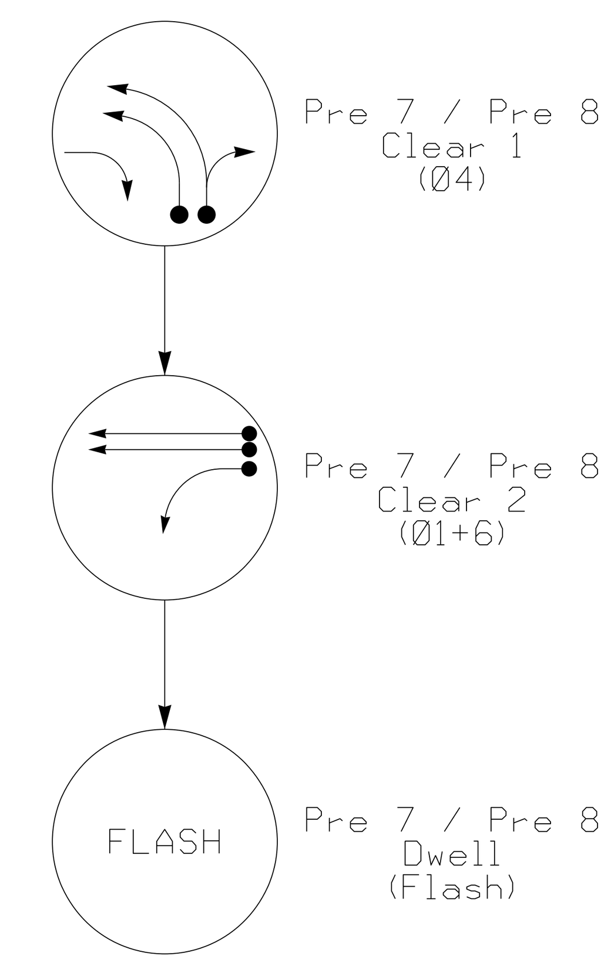
SIGNAL FACE	INTERVAL 1	2
F21, F23	ON	OFF
F22, F24	OFF	ON
F61, F63	ON	OFF
F62, F64	OFF	ON

SIGNAL FACE I.D.

All Heads L.E.D.



DRE FAILURE PREEMPT



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

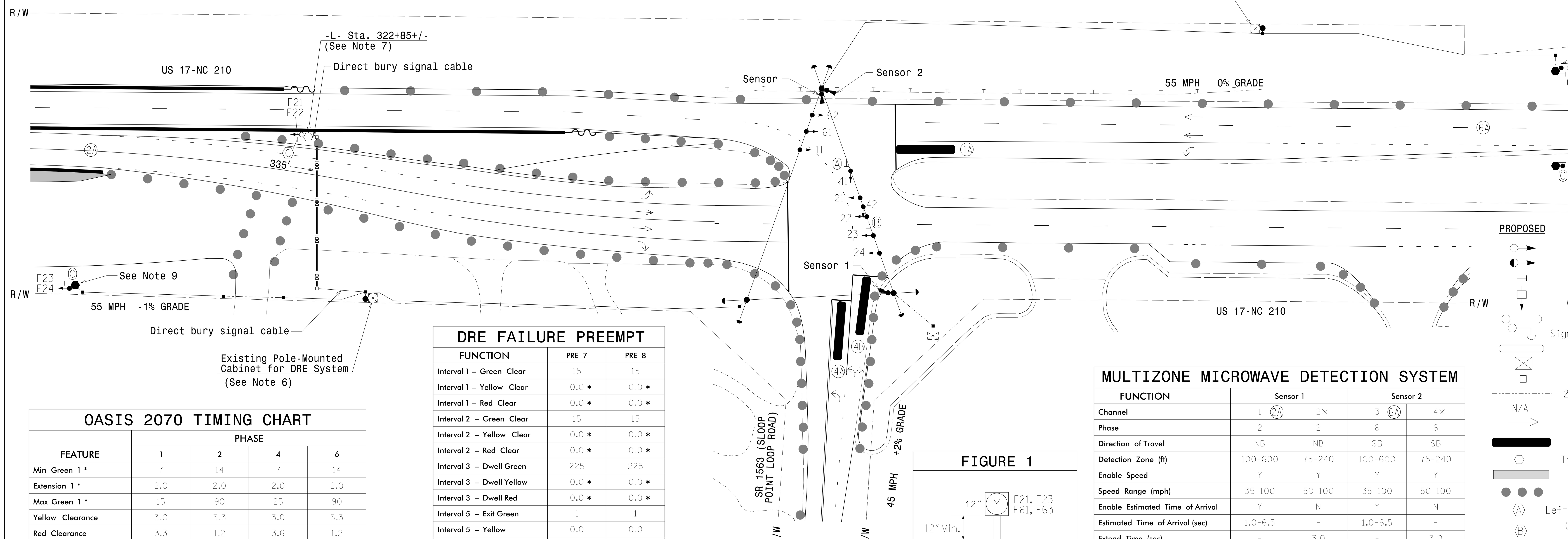
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	✳	✳	1	Y	Y	-	-	15	-	✳
					6	Y	Y	Y	-	3	-	✳
4A	6X40	0	✳	✳	4	Y	Y	-	-	3	-	✳
4B	6X40	0	✳	✳	4	Y	Y	-	-	10	-	✳

✳ Multizone Microwave Detection Area
Multizone microwave detector unit locations should be confirmed in the field by the contractor in order to provide detection of the areas indicated.

3 Phase
Fully Actuated
(Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Phase 1 may be lagged.
5. Flash beacons 3 seconds prior to end of phase 2 or 6 green.
6. Contractor shall maintain DRE system and signal ahead flashers during all phases of construction.
7. This DRE flasher/sign assembly and junction box will be removed prior to shifting traffic into the pattern shown in Temporary Signal Design #4. Conduit may be removed or abandoned as determined by the Engineer.
8. This intersection features a multizone microwave detection system. Shown locations of detectors are conceptual only. Detectors should be placed to ensure the desired operation parameters are achieved.
9. Install sign W3-3 in advance of the flasher beacon. See TMP plan for sign location.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Detection Area	N/A
	Type III Signal Pedestal	
	Construction Zone	N/A
	Drums	N/A
Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
Ⓑ	Combined Left and Right Arrow Sign (R3-6)	Ⓑ
Ⓒ	"Be Prepared to Stop" Sign (W3-4 with W16-13p) (See Figure 1)	Ⓒ
	Out of Pavement Detector	

DRE FAILURE PREEMPT

FUNCTION	PRE 7	PRE 8
Interval 1 – Green Clear	15	15
Interval 1 – Yellow Clear	0.0 *	0.0 *
Interval 1 – Red Clear	0.0 *	0.0 *
Interval 2 – Green Clear	15	15
Interval 2 – Yellow Clear	0.0 *	0.0 *
Interval 2 – Red Clear	0.0 *	0.0 *
Interval 3 – Dwell Green	225	225
Interval 3 – Dwell Yellow	0.0 *	0.0 *
Interval 3 – Dwell Red	0.0 *	0.0 *
Interval 5 – Exit Green	1	1
Interval 5 – Yellow	0.0	0.0
Interval 5– Red	0.0	0.0
Exit Phase(s)	2, 6	2, 6
Priority	High	High
Delay Time	0	0
Minimum Green Before Pre	20	20
Ped Clear Before Pre	0	0
Yellow Clear Before Pre	0.0 *	0.0 *
Red Clear Before Pre	0.0 *	0.0 *
Dwell Min Time	20	20
Flash Dwell Interval?	Y	Y
Enable Backup Protection	N	N
Ped Clear Through Yellow	N	N
Omit Overlaps	C	C

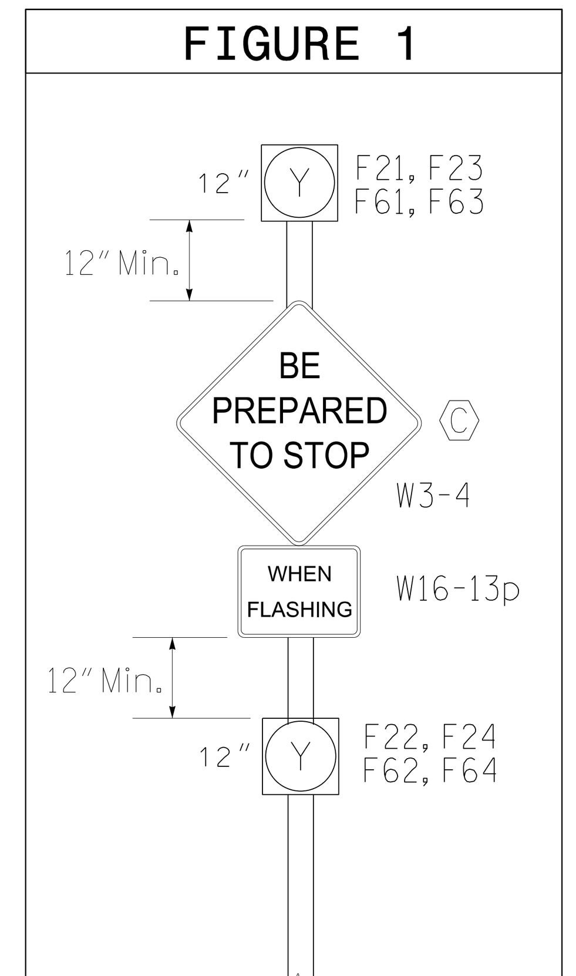
* Time defaults to time used for phase during normal operation.

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	4	6
Min Green 1 *	7	14	7	14
Extension 1 *	2.0	2.0	2.0	2.0
Max Green 1 *	15	90	25	90
Yellow Clearance	3.0	5.3	3.0	5.3
Red Clearance	3.3	1.2	3.6	1.2
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	-	-	-	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

FIGURE 1



MULTIZONE MICROWAVE DETECTION SYSTEM

FUNCTION	Sensor 1		Sensor 2	
Channel	1 (2A)	2✳	3 (6A)	4✳
Phase	2	2	6	6
Direction of Travel	NB	NB	SB	SB
Detection Zone (ft)	100-600	75-240	100-600	75-240
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	50-100	35-100	50-100
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	1.0-6.5	-	1.0-6.5	-
Extend Time (sec)	-	3.0	-	3.0

✳ If output is present during associated phase's red clear, a minimum 3 second stop time willbe placed on the red clearance interval.

Signal Upgrade
Temporary Design 3 - TMP Phase I - Step 3

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Prepared for the Offices of:
Transportation Mobility and Safety Division — State of North Carolina Department of Transportation — Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 — 1" = 40'

US 17-NC 210 at SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE: October 2021	REVIEWED BY: D Harris
PREPARED BY: J Hambright	REVIEWED BY: R M Muncey

REVISIONS	INIT.	DATE

NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 4/2021
C7FE51B522454FA...
DATE

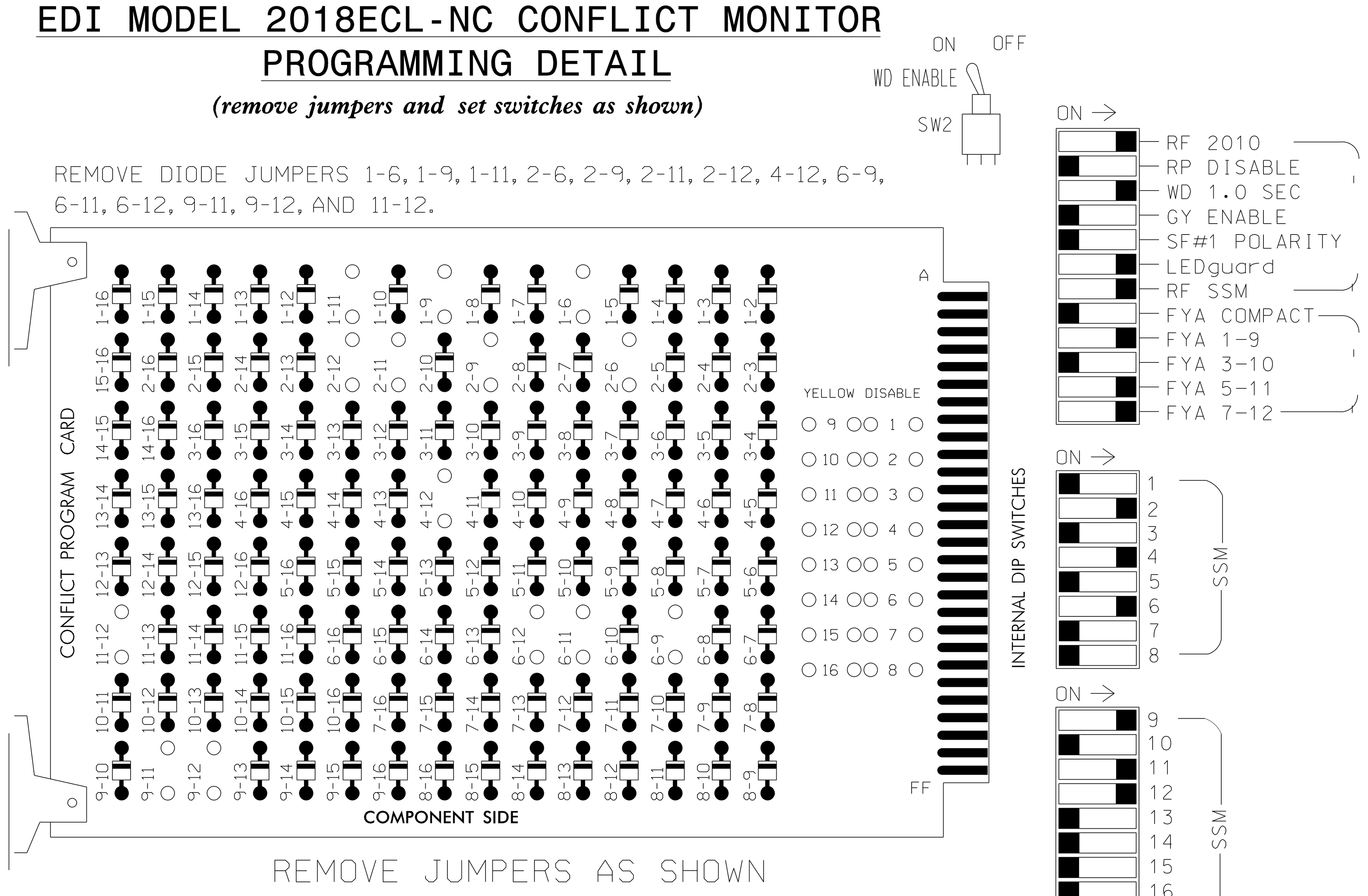
SIG. INVENTORY NO. 03-0585T3

$$$$$$SYSDATE$$$$$$ U:*Traffic*Signals*Design*Signal Design*Temporary Design*R3300B_sig_dsn_03-0585T3.dgn User:jhambright

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-6, 1-9, 1-11, 2-6, 2-9, 2-11, 2-12, 4-12, 6-9, 6-11, 6-12, 9-11, 9-12, AND 11-12.



NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

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. Enable Simultaneous Gap-Out for all Phases.
3. Program phases 2 and 6 for Startup In Green.
4. Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
5. If this signal will be managed by an ATMS software, enable controller and detector logging for all enabled detectors.
6. The cabinet and controller are part of the US 17 - NC 210 (Topsail) CLS. Signal System #10324.

EQUIPMENT INFORMATION

CONTROLLER..............2070
CABINET.................332 W/ AUX
SOFTWARE................ECONOLITE OASIS
CABINET MOUNT...........BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED......S1,S2,S3*,S5,S6*,S8,S9*, S12*,AUX S1,AUX S4,AUX S5
PHASES USED.............1,2,4,6
OVERLAP "A".............1+2
OVERLAP "B".............NOT USED
OVERLAP "C".............6
OVERLAP "D".............2+4
* Used for Advance Beacon only

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S3	S4	S5	S6	S6	S7	S8	S9	S9	S10	S11	S12	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13		3	4	14		5	6	15		7	8	16		9	10	17	11	12	18
PHASE	1	2	2 PED	ADVANCE BEACON	3	4	4 PED	ADVANCE BEACON	5	6	6 PED	ADVANCE BEACON	7	8	8 PED	ADVANCE BEACON	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	22,23	NU	~~F21 F23~~	NU	41,42	NU	F61 F63	NU	61,62	NU	F22 F24	NU	NU	NU	F62 F64	11★	NU	NU	21★	24★	NU
RED		128				101				134											A101	
YELLOW	*	129				102				135												
GREEN		130				103				136												
RED ARROW																	A121			A114		
YELLOW ARROW																	A122			A115	A102	
FLASHING YELLOW ARROW																	A123			A116	A103	
GREEN ARROW	127																					
(Don't Walk)																						
PED YELLOW				~~** 114~~				** 105				** 120				** 111						
(Walk)			~~*~~				*				*				*							

NU = Not Used

* Denotes install load resistor. See load resistor installation details sheets 1, 8, and 9.

** Special advance beacons will be wired to ~~S3Y~~, S6Y, S9Y, and S12Y. See wiring and programming details on sheets 8 and 9 of this electrical detail.

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)

FILE		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø 1 1A	Click 112 Ø 2 Channel 1	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
FILE "I"	L	NOT USED	ST Channel 2												ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Click 112 Ø 6 Channel 1	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
FILE "J"	L		ST Channel 2												

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

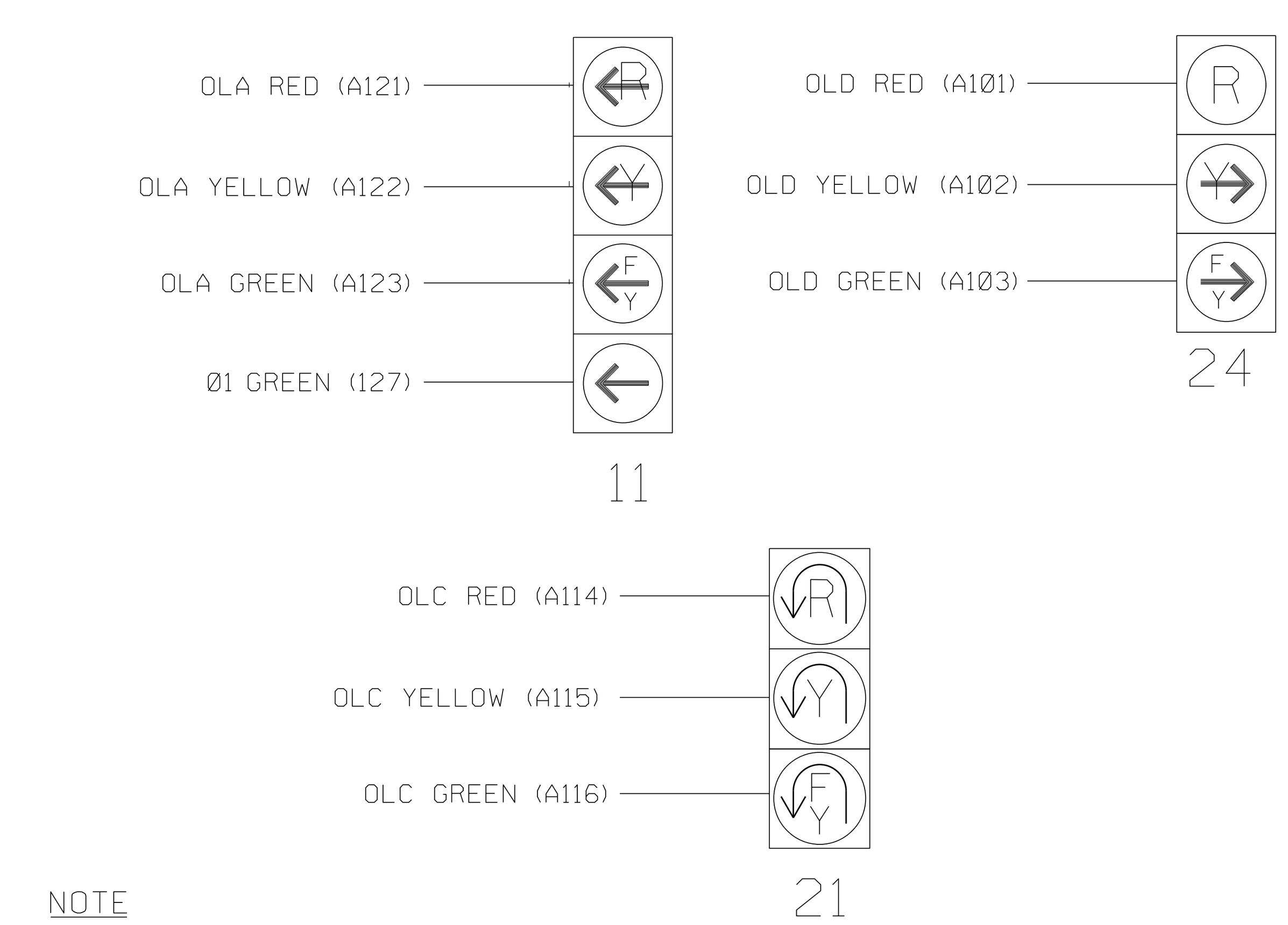
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	**	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y	Y		3

** Multizone Microwave Detection Zone. See Special Detector Note.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal head 11 requires special logic programming. See sheet 2 for programming instructions.

SPECIAL DETECTOR NOTE

Install a Multizone Microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For Detection Zone 1A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

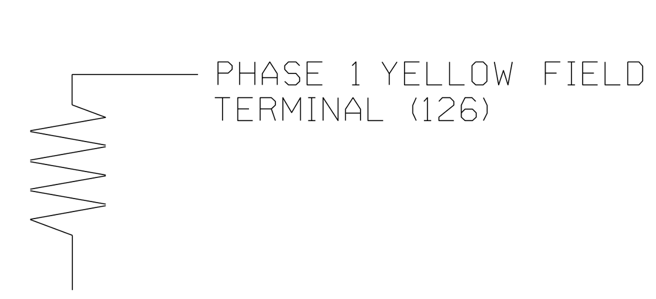
For the phase 2 and 6 approaches, install an advance detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 1 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE: October 2021	REVIEWED BY: E D Harris
PREPARED BY: R M Muncey	REVIEWED BY: L E Overn

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T3

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. 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, AND 3.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
 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
```

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

PRESS '+'

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

              SCROLL DOWN
THEN:
SET OUTPUT  ASSIGNMENT #52 OFF
```

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

PRESS '+'

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

              SCROLL DOWN
THEN:
SET OUTPUT  ASSIGNMENT #51 ON
```

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

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          |12345678910111213141516
VEH OVL PARENTS: |XX
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: | X                          <- NOTICE VEH OVL EXT
STARTUP COLOR: _ RED   _ YELLOW  _ GREEN
FLASH COLORS:  _ RED   _ YELLOW  X GREEN      <- NOTICE GREEN FLASH
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........2         <- NOTICE GREEN EXTENSION
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
```

PRESS '+' TWICE

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          |12345678910111213141516
VEH OVL PARENTS: |    X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |    X                       <- NOTICE VEH OVL EXT
STARTUP COLOR: _ RED   _ YELLOW  _ GREEN
FLASH COLORS:  _ RED   _ YELLOW  X GREEN      <- NOTICE GREEN FLASH
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........2         <- NOTICE GREEN EXTENSION
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
```

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
 PHASE:          |12345678910111213141516
VEH OVL PARENTS: | X X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: | X                          <- NOTICE VEH OVL EXT
STARTUP COLOR: _ RED   _ YELLOW  _ GREEN
FLASH COLORS:  _ RED   _ YELLOW  X GREEN      <- NOTICE GREEN FLASH
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........2         <- NOTICE GREEN EXTENSION
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
```

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 2 of 9

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Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T3

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 2 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 4, 5, 6, 7, 8, and 9.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
  LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5   IS ON
AND RED CLEAR ON PHASE #2   IS ON
AND YELLOW ON PHASE    #6   IS OFF

            SCROLL DOWN
THEN:
SET LOGIC FLAG          #1  ON
SET INPUT   ASSIGNMENT #61  ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG          #2  ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
  LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5   IS OFF
OR  RED CLEAR ON PHASE #2   IS OFF

            SCROLL DOWN
THEN:
SET LOGIC FLAG          #1  OFF
SET INPUT   ASSIGNMENT #61  OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
  LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  LOGIC FLAG          #1  IS ON
OR  INPUT   ASSIGNMENT #44  IS ON

            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #60  ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 2 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
  LOGICAL I/O COMMAND #7  (+/-COMMAND#)
IF  LOGIC FLAG          #1  IS OFF
AND INPUT   ASSIGNMENT #44  IS OFF

            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #60  OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
  LOGICAL I/O COMMAND #8  (+/-COMMAND#)
IF  LOGIC FLAG          #2  IS ON
AND INPUT   ASSIGNMENT #43  IS OFF

            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #64  ON
```

NOTE: LATCHED LOGIC FLAG #2 ACTUATES PREEMPT 7 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
  LOGICAL I/O COMMAND #9  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5   IS OFF

            SCROLL DOWN
THEN:
SET LOGIC FLAG          #2  OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 2 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

- INPUT 5 = OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 2)
- INPUT 43 = FLASH SENSE
- INPUT 44 = CABINET CIRCUITRY STOP TIME CONTROL INPUT
- INPUT 60 = STOP TIME
- INPUT 61 = SPECIAL FUNCTION ALARM 1
- INPUT 64 = PREEMPT 7

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #7 IS REACHED.

```
   PREEMPTION  #7  SETTINGS (NEXT:1-10)
 INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
   GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0  ¦   X
2  15  0.0  0.0  ¦X    X
3 255  0.0  0.0  ¦ X   X
4   0  0.0  0.0  ¦
5   1  0.0  0.0  ¦ X   X
EXIT CALLS       ¦
                OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                 ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW    ¦ X XX
OMIT OVERLAPS:            ¦   X
```

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 3 of 9

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License No. F-0672

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey
C7EE51B522454FA...
/2021
DATE

SIG. INVENTORY NO. 03-0585T3

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-12.4

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 6 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 10, 11, 12, 13, 14, and 15.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #10 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS ON
AND RED CLEAR ON PHASE #6   IS ON
AND YELLOW ON PHASE    #1   IS OFF
AND YELLOW ON PHASE    #2   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #3   ON
SET INPUT   ASSIGNMENT #62  ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG         #4   ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
LOGICAL I/O COMMAND #11 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS OFF
OR  RED CLEAR ON PHASE #6   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #3   OFF
SET INPUT   ASSIGNMENT #62  OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
LOGICAL I/O COMMAND #12 (+/-COMMAND#)
IF  LOGIC FLAG         #3   IS ON
OR  INPUT   ASSIGNMENT #44  IS ON
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58  ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 6 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
LOGICAL I/O COMMAND #13 (+/-COMMAND#)
IF  LOGIC FLAG         #3   IS OFF
AND INPUT   ASSIGNMENT #44  IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58  OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
LOGICAL I/O COMMAND #14 (+/-COMMAND#)
IF  LOGIC FLAG         #4   IS ON
AND INPUT   ASSIGNMENT #43  IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #63  ON
```

NOTE: LATCHED LOGIC FLAG #4 ACTUATES PREEMPT 8 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
LOGICAL I/O COMMAND #15 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #4   OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 6 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

INPUT 6 = OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 6)
INPUT 43 = FLASH SENSE
INPUT 44 = CABINET CIRCUITRY STOP TIME CONTROL INPUT
INPUT 58 = STOP TIME
INPUT 62 = SPECIAL FUNCTION ALARM 2
INPUT 63 = PREEMPT 8

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #8 IS REACHED.

```
   PREEMPTION  #8  SETTINGS (NEXT:1-10)
INTERVAL/TIMING |  CLEAR/DWELL PHASES
  GRN YEL  RED  |12345678910111213141516
1  15  0.0  0.0 |   X
2  15  0.0  0.0 |X     X
3 255  0.0  0.0 | X    X
4   0  0.0  0.0 |
5   1  0.0  0.0 | X    X
EXIT CALLS      |
              OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                | ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW   | X XX
OMIT OVERLAPS:           |   X
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 4 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T3

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-12.5

INPUT REASSIGNMENT PROGRAMMING DETAIL

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 12 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 21, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

DEFAULT PROGRAMMING

```
PAGE:1  C1 PIN:43  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............12
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

ENTER A "Y" FOR NOT ENABLED

DEFAULT PROGRAMMING

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:43  NOT ENABLED
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 16 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 23, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

DEFAULT PROGRAMMING

```
PAGE:1  C1 PIN:44  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............16
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

ENTER A "Y" FOR NOT ENABLED

DEFAULT PROGRAMMING

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:44  NOT ENABLED
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 5 of 9

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NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B622454FA...
DATE

SIG. INVENTORY NO. 03-0585T3

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-12.6

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM CABINET STOP TIME TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 44, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:82  STOP TIME ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................44
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  -> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y ..... DEFAULT PROGRAMMING
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:82  NOT ENABLED
INPUT ASSIGNMENT #.................44
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 60, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0  NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................60
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y -> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0  STOP TIME
INPUT ASSIGNMENT #.................60
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 6

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 58, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0  NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................58
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y -> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0  STOP TIME
INPUT ASSIGNMENT #.................58
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 1

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 61, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0  NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................61
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1 -> ENTER A "1" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0  SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #.................61
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 6 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Traffic Engineering Branch - Mobility and Safety Division
NC DEPARTMENT OF TRANSPORTATION - Traffic Engineering & Safety Systems Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FB65B8B2534AE... DATE

SIG. INVENTORY NO. 03-0585T3

11:19:38 AM
U:\raleigh\Projects\Design\Electrical Details\Temporary Design\R3300B_sig_ele_03-0585t3.dgn
User:lhamright

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-12.7

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 62, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.....62
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC)..... 0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED.....Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).....
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....2  -> ENTER A "2" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #.....62
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED.....
VEHICLE DETECTOR (1-64).....
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....2
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 64, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.....64
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC)..... 0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED.....Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).....
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....7  -> ENTER PREEMPT 7
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.....64
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED.....
VEHICLE DETECTOR (1-64).....
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....7
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 63, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.....63
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC)..... 0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED.....Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).....
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....8  -> ENTER PREEMPT 8
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.....63
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED.....
VEHICLE DETECTOR (1-64).....
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....8
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 7 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

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

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
SIGNATURE DATE
SIG. INVENTORY NO. 03-0585T3

ADVANCE BEACON #1
OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #33 (PIN 35) IS REACHED.

```
PAGE:1  C1 PIN:35  NOT ENABLED
OUTPUT ASSIGNMENT #.................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH. ALONG WITH THE RATE IN WHICH AT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:35  NOT ENABLED
SELECT BEACON INDEX (1-4)..........1
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:35  ADVANCE BEACON
OUTPUT ASSIGNMENT #.................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #34 (PIN 36) IS REACHED.

```
PAGE:1  C1 PIN:36  NOT ENABLED
OUTPUT ASSIGNMENT #.................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:36  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).....33
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:36  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #.................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 33 = Ø2 Ped Yellow
OUTPUT 34 = Ø6 Ped Yellow

ADVANCE BEACON PROGRAMMING DETAIL

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '2' (OUTPUT BEACON SETTINGS).

```
OUTPUT BEACON SETTINGS
TRIGGER PHASES: |123456789101112131415 16
BEACON #1 OFF   | X
BEACON #2 OFF   |    X
BEACON #3 OFF   |
BEACON #4 OFF   |
                BEACON  |  1  2  3  4
OFF DELAY TIME (0-255)  |  0  0  0  0
ON DELAY TIME  (0-255)  |  0  0  0  0
STOP-TIME HOLD (0-255)  |  2  2  0  0
```

SCROLL DOWN TO VIEW ALL DATA

← NOTICE STOP TIME HOLD

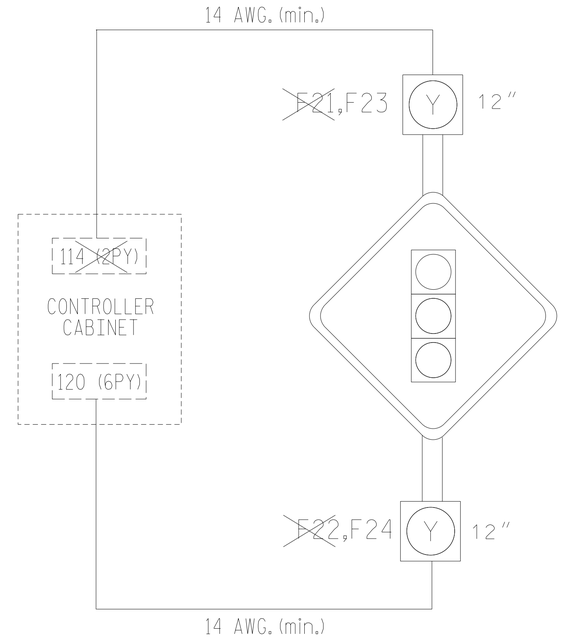
ADVANCE BEACON PROGRAMMING COMPLETE

NOTE: AN OUTPUT HAS TO BE ASSIGNED AS AN ADVANCE BEACON IN ORDER FOR PROPER OPERATION TO OCCUR. SEE OUTPUT ASSIGNMENT DETAIL ON THIS SHEET.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

ADVANCE BEACON #1 WIRING DETAIL

(wire flashers as shown below)



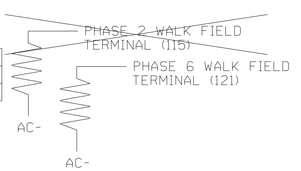
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 114 (2PY) AND TERMINAL 120 (6PY).
2. INSERT LOADSWITCH FOR ~~S6~~ AND S9.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 33 AND 34 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 8 of 9

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Prepared for the Offices of:
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Traffic Engineering Branch
Traffic Signals Management Section
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
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Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T3

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-12.8

11:20:00 AM
U:\Work Files\Signals\Design\Electrical Details\Temporary Design\R3300B_sig_ele_03-0585T3.dgn
User:jfromright

ADVANCE BEACON #2
OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #35 (PIN 37) IS REACHED.

```
PAGE:1  C1 PIN:37  NOT ENABLED
OUTPUT ASSIGNMENT #.................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH)..............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE......................._
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON.....................Y
OUT OF PHASE FLASHER..............._
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT.......................
ANY PREEMPT........................
COORDINATION PLAN..................
OFFSET.............................
PHASE CHECK........................
PHASE ON...........................
PHASE NEXT.........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE AT WHICH IT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:37  NOT ENABLED
SELECT BEACON INDEX (1-4)..........2
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:37  ADVANCE BEACON
OUTPUT ASSIGNMENT #.................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH)..............1
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE......................._
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON.....................Y
OUT OF PHASE FLASHER..............._
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT......................._
ANY PREEMPT........................_
COORDINATION PLAN.................._
OFFSET............................._
PHASE CHECK........................_
PHASE ON..........................._
PHASE NEXT........................._
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #36 (PIN 38) IS REACHED.

```
PAGE:1  C1 PIN:38  NOT ENABLED
OUTPUT ASSIGNMENT #.................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE......................._
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON......................_
OUT OF PHASE FLASHER.....Y
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT......................._
ANY PREEMPT........................_
COORDINATION PLAN.................._
OFFSET............................._
PHASE CHECK........................_
PHASE ON..........................._
PHASE NEXT........................._
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:38  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).....35
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:38  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #.................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE......................._
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON....................._
OUT OF PHASE FLASHER.....Y
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT......................._
ANY PREEMPT........................_
COORDINATION PLAN.................._
OFFSET............................._
PHASE CHECK........................_
PHASE ON..........................._
PHASE NEXT........................._
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 35 = Ø 4 Ped Yellow
OUTPUT 36 = Ø 8 Ped Yellow

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T3
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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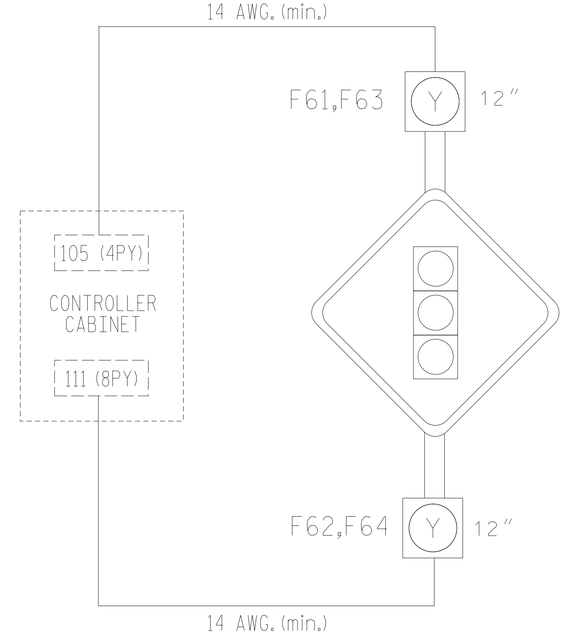
PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-12.9

ADVANCE BEACON #2 WIRING DETAIL

(wire flashers as shown below)

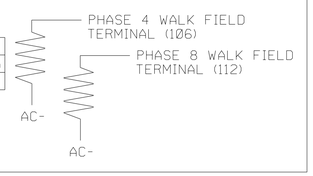


IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 105 (4PY) AND TERMINAL 111 (8PY).
2. INSERT LOADSWITCH FOR S6 AND S12.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 35 AND 36 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Temporary Design 3 - TMP Phase I - Step 3
Electrical Detail - Sheet 9 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

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

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

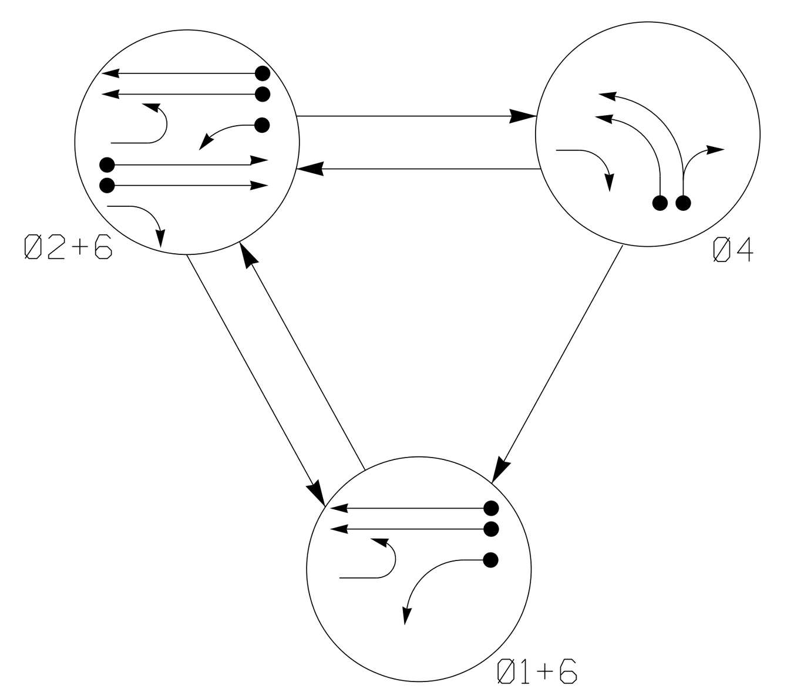
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T3

11:20:12 AM
U:\Raleigh\Projects\Signals\Design\Electrical Details\Temporary Design\R3300B_sig_ele_03-0585T3.dgn
User:jhornbright

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

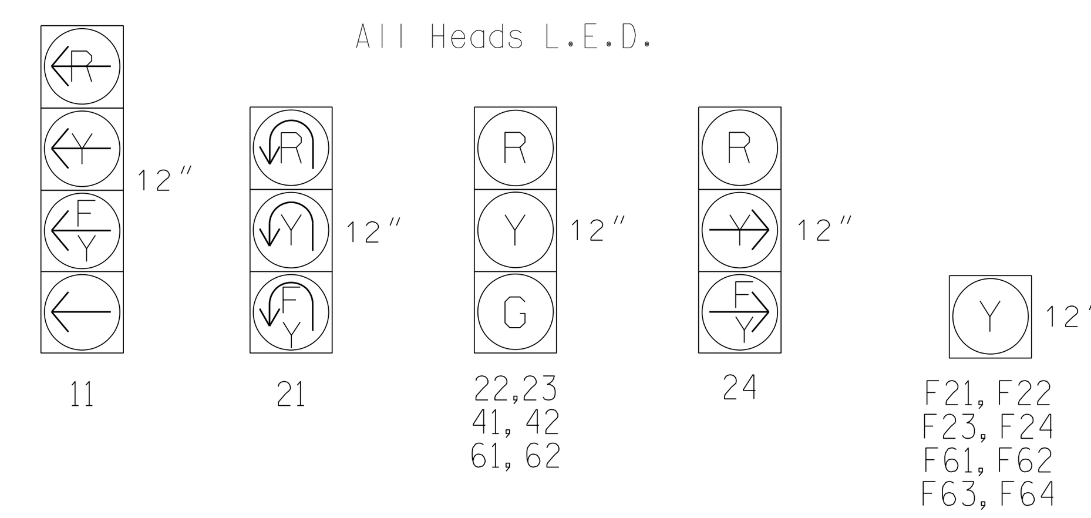
SIGNAL FACE	PHASE Ø1+6	Ø2+6	Ø4	Pre 7/8 CLEAR 1	Pre 7/8 CLEAR 2	Pre 7/8 DWELL	FLASH
11	←	← F/Y	←R	←R	←	←Y	←Y
21	F/Y	F/Y	R	R	R	Y	Y
22, 23	R	G	R	R	R	Y	Y
24	R	F/Y→	F/Y→	F/Y→	R	Y→	Y→
41, 42	R	R	G	G	R	R	R
61, 62	G	G	R	R	G	Y	Y

TABLE OF OPERATION

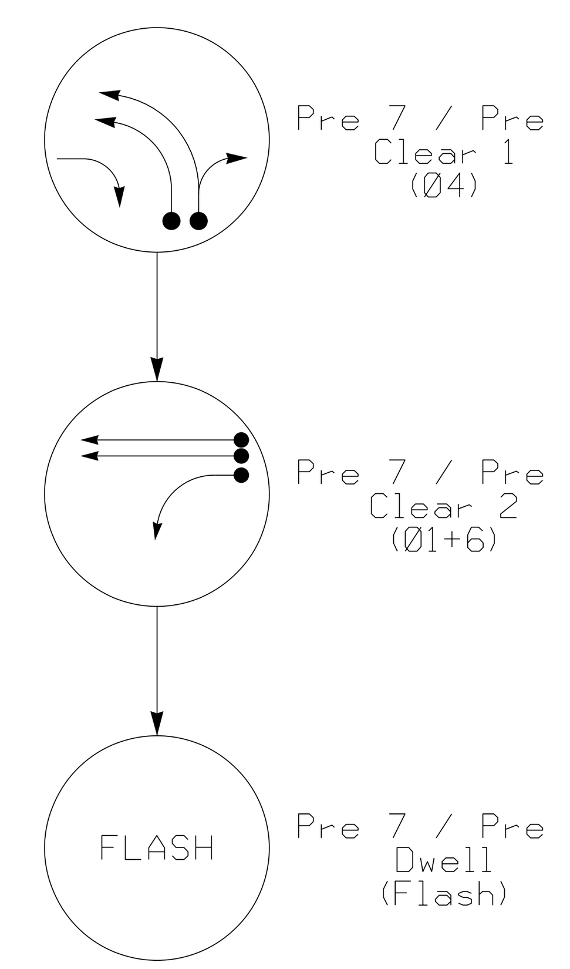
SIGNAL FACE	INTERVAL 1	2
F21, F23	ON	OFF
F22, F24	OFF	ON
F61, F63	ON	OFF
F62, F64	OFF	ON

SIGNAL FACE I.D.

All Heads L.E.D.



DRE FAILURE PREEMPT



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

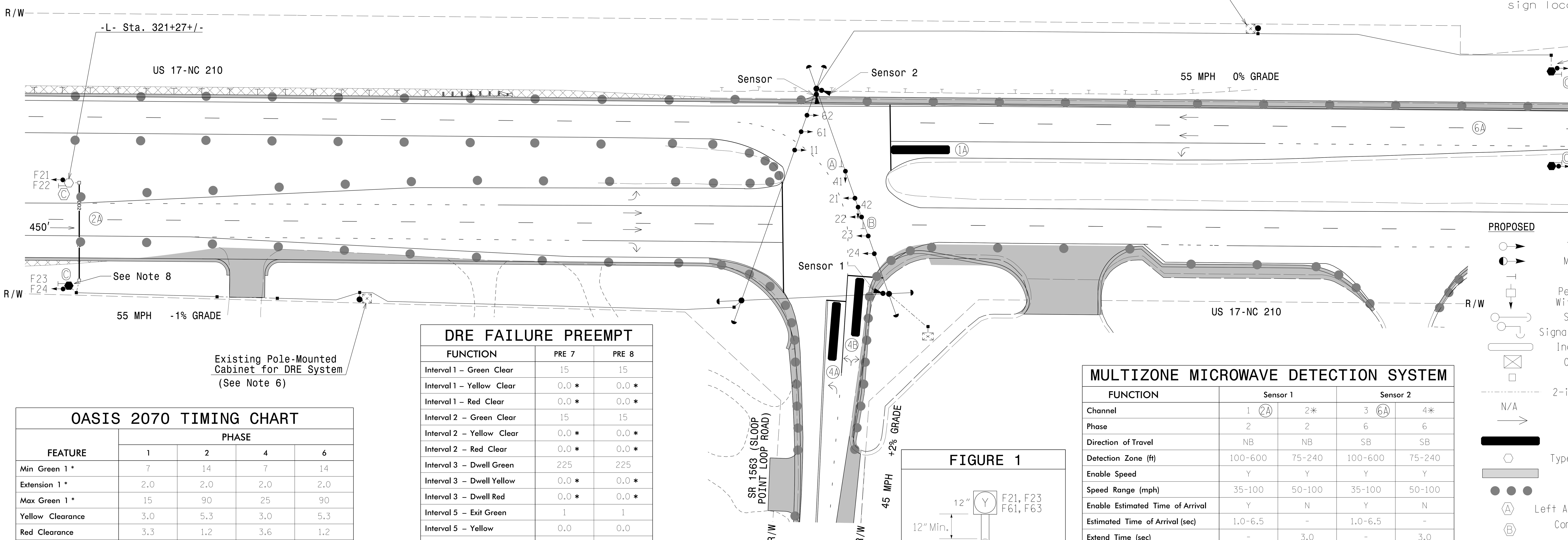
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	✳	✳	1	Y	Y	-	-	15	-	✳
					6	Y	Y	Y	-	3	-	✳
4A	6X40	0	✳	✳	4	Y	Y	-	-	3	-	✳
4B	6X40	0	✳	✳	4	Y	Y	-	-	10	-	✳

✳ Multizone Microwave Detection Area
Multizone microwave detector unit locations should be confirmed in the field by the contractor in order to provide detection of the areas indicated.

3 Phase
Fully Actuated
(Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Phase 1 may be lagged.
5. Flash beacons 3 seconds prior to end of phase 2 or 6 green.
6. Contractor shall maintain DRE system and signal ahead flashers during all phases of construction.
7. This intersection features a multizone microwave detection system. Shown locations of detectors are conceptual only. Detectors should be placed to ensure the desired operation parameters are achieved.
8. Install sign W3-3 in advance of the flasher beacon. See TMP plan for sign location.



LEGEND

	PROPOSED		EXISTING
		Traffic Signal Head	
		Modified Signal Head	N/A
		Sign	
		Pedestrian Signal Head With Push Button & Sign	
		Signal Pole with Guy	
		Signal Pole with Sidewalk Guy	
		Inductive Loop Detector	
		Controller & Cabinet	
		Junction Box	
		2-in Underground Conduit	
	N/A	Right of Way	
		Directional Arrow	
		Detection Area	N/A
		Type III Signal Pedestal	
		Construction Zone	N/A
		Drums	N/A
	Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
	Ⓑ	Combined Left and Right Arrow Sign (R3-6)	Ⓑ
	Ⓒ	"Be Prepared to Stop" Sign (W3-4 with W16-13p) (See Figure 1)	Ⓒ
		Out of Pavement Detector	

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	4	6
Min Green 1 *	7	14	7	14
Extension 1 *	2.0	2.0	2.0	2.0
Max Green 1 *	15	90	25	90
Yellow Clearance	3.0	5.3	3.0	5.3
Red Clearance	3.3	1.2	3.6	1.2
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	-	-	-	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

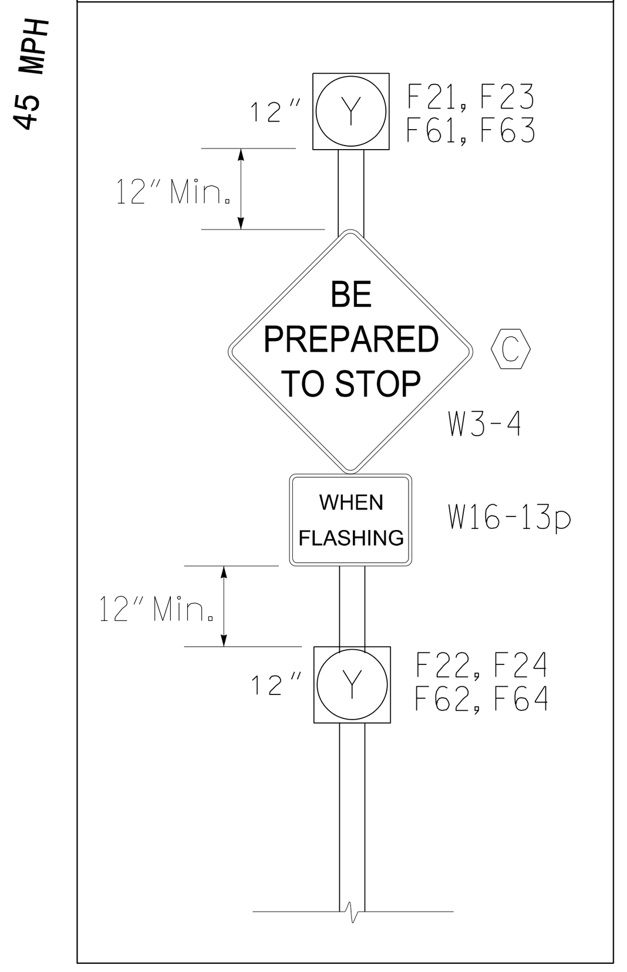
* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

DRE FAILURE PREEMPT

FUNCTION	PRE 7	PRE 8
Interval 1 – Green Clear	15	15
Interval 1 – Yellow Clear	0.0 *	0.0 *
Interval 1 – Red Clear	0.0 *	0.0 *
Interval 2 – Green Clear	15	15
Interval 2 – Yellow Clear	0.0 *	0.0 *
Interval 2 – Red Clear	0.0 *	0.0 *
Interval 3 – Dwell Green	225	225
Interval 3 – Dwell Yellow	0.0 *	0.0 *
Interval 3 – Dwell Red	0.0 *	0.0 *
Interval 5 – Exit Green	1	1
Interval 5 – Yellow	0.0	0.0
Interval 5– Red	0.0	0.0
Exit Phase(s)	2, 6	2, 6
Priority	High	High
Delay Time	0	0
Minimum Green Before Pre	20	20
Ped Clear Before Pre	0	0
Yellow Clear Before Pre	0.0 *	0.0 *
Red Clear Before Pre	0.0 *	0.0 *
Dwell Min Time	20	20
Flash Dwell Interval?	Y	Y
Enable Backup Protection	N	N
Ped Clear Through Yellow	N	N
Omit Overlaps	C	C

* Time defaults to time used for phase during normal operation.

FIGURE 1



MULTIZONE MICROWAVE DETECTION SYSTEM

FUNCTION	Sensor 1		Sensor 2	
Channel	1 (2A)	2✳	3 (6A)	4✳
Phase	2	2	6	6
Direction of Travel	NB	NB	SB	SB
Detection Zone (ft)	100-600	75-240	100-600	75-240
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	50-100	35-100	50-100
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	1.0-6.5	-	1.0-6.5	-
Extend Time (sec)	-	3.0	-	3.0

✳ If output is present during associated phase's red clear, a minimum 3 second stop time willbe placed on the red clearance interval.

Signal Upgrade
Temporary Design 4 - TMP Phase I - Step 4

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Prepared for the Offices of:
Transportation Mobility and Safety Division
North Carolina Department of Transportation
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40
1" = 40'

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	D Harris
PREPARED BY:	J Hambright	REVIEWED BY:	R M Muncey

REVISIONS	INIT.	DATE

NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

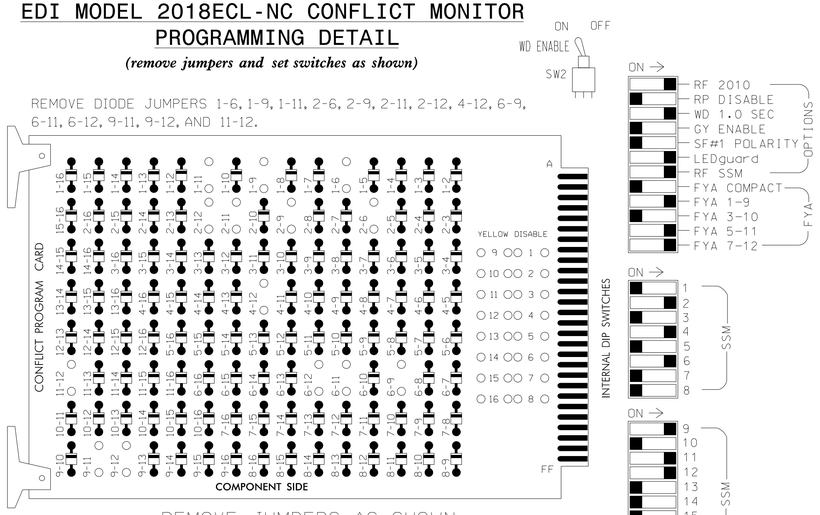
DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T4

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-6, 1-9, 1-11, 2-6, 2-9, 2-11, 2-12, 4-12, 6-9, 6-11, 6-12, 9-11, 9-12, AND 11-12.



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. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

■ = 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. Enable Simultaneous Gap-Out for all Phases.
3. Program phases 2 and 6 for Startup In Green.
4. Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
5. If this signal will be managed by an ATMS software, enable controller and detector logging for all enabled detectors.
6. The cabinet and controller are part of the US 17 - NC 210 (Topsail) CLS. Signal System #10324.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3✱,S5,S6✱,S8,S9✱, S12✱,AUX S1,AUX S4,AUX S5
PHASES USED.....1,2,4,6
OVERLAP "A".....1+2
OVERLAP "B".....NOT USED
OVERLAP "C".....6
OVERLAP "D".....2+4
✱ Used for Advance Beacon only

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-13.1

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3		S4	S5	S6		S7	S8	S9		S10	S11	S12		AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13		3	4	14		5	6	15		7	8	16		9	10	17	11	12	18
PHASE	1	2	2 PED	ADVANCE BEACON	3	4	4 PED	ADVANCE BEACON	5	6	6 PED	ADVANCE BEACON	7	8	8 PED	ADVANCE BEACON	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11 ★	22,23	NU	F21 F23	NU	41,42	NU	F61 F63	NU	61,62	NU	F22 F24	NU	NU	NU	F62 F64	11 ★	NU	NU	21 ★	24 ★	NU
RED		128				101				134											A101	
YELLOW	✱	129				102				135												
GREEN		130				103				136												
RED ARROW																	A121			A114		
YELLOW ARROW																	A122			A115	A102	
FLASHING YELLOW ARROW																	A123			A116	A103	
GREEN ARROW	127																					
PED																						
PED YELLOW				✱✱ 114				✱✱ 105				✱✱ 120				✱✱ 111						
			✱				✱				✱				✱							

NU = Not Used

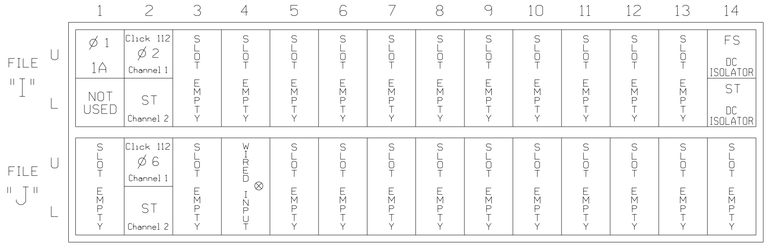
✱ Denotes install load resistor. See load resistor installation details sheets 1, 8, and 9.

✱✱ Special advance beacons will be wired to S3Y, S6Y, S9Y, and S12Y. See wiring and programming details on sheets 8 and 9 of this electrical detail.

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



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

⊗ Wired Input - Do not populate slot with detector card

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	✱✱	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y	Y		3

✱✱ Multizone Microwave Detection Zone. See Special Detector Note.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

SPECIAL DETECTOR NOTE

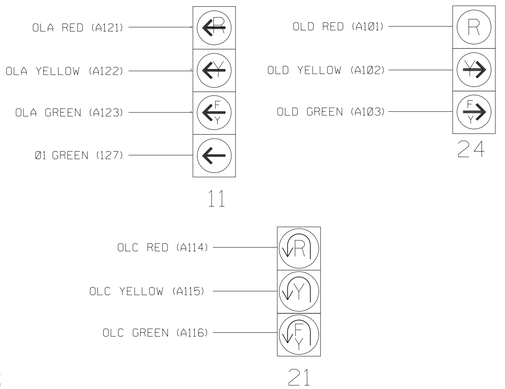
Install a Multizone Microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For Detection Zone 1A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

For the phase 2 and 6 approaches, install an advance detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal head 11 requires special logic programming. See sheet 2 for programming instructions.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 1 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Traffic Engineering, Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FB6E0B2534AFC... DATE

SIG. INVENTORY NO. 03-0585T4

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-13.2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. 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, AND 3.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
  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
```

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

PRESS '+'

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

                SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #52 OFF
```

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

PRESS '+'

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

                SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #51 ON
```

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

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |XX
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: | X
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).........2
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
```

← NOTICE VEH OVL EXT
← NOTICE GREEN FLASH
← NOTICE GREEN EXTENSION

PRESS '+' TWICE

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |    X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |    X
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).........2
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
```

← NOTICE VEH OVL EXT
← NOTICE GREEN FLASH
← NOTICE GREEN EXTENSION

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: | X X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: | X
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).........2
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
```

← NOTICE VEH OVL EXT
← NOTICE GREEN FLASH
← NOTICE GREEN EXTENSION

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 2 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Signal Systems Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7E82E9B9D7245AB3A DATE

SIG. INVENTORY NO. 03-0585T4

11:12:21 AM
User:rmuncey
U:\Traffic\Projects\Signals\Design\Electrical Details\Temporary Design\R3300B_sig_ele_03-0585T4.dgn
User:jthornburgh

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-13.3

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 2 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 4, 5, 6, 7, 8, and 9.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  INPUT    ASSIGNMENT #5   IS ON
AND RED CLEAR ON PHASE #2   IS ON
AND YELLOW ON PHASE    #6   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG          #1  ON
SET INPUT    ASSIGNMENT #61 ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG          #2  ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  INPUT    ASSIGNMENT #5   IS OFF
OR  RED CLEAR ON PHASE #2   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG          #1  OFF
SET INPUT    ASSIGNMENT #61 OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  LOGIC FLAG          #1  IS ON
OR  INPUT    ASSIGNMENT #44 IS ON
            SCROLL DOWN
THEN:
SET INPUT    ASSIGNMENT #60 ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 2 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
LOGICAL I/O COMMAND #7  (+/-COMMAND#)
IF  LOGIC FLAG          #1  IS OFF
AND INPUT    ASSIGNMENT #44 IS OFF
            SCROLL DOWN
THEN:
SET INPUT    ASSIGNMENT #60 OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
LOGICAL I/O COMMAND #8  (+/-COMMAND#)
IF  LOGIC FLAG          #2  IS ON
AND INPUT    ASSIGNMENT #43 IS OFF
            SCROLL DOWN
THEN:
SET INPUT    ASSIGNMENT #64 ON
```

NOTE: LATCHED LOGIC FLAG #2 ACTUATES PREEMPT 7 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
LOGICAL I/O COMMAND #9  (+/-COMMAND#)
IF  INPUT    ASSIGNMENT #5   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG          #2  OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 2 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

INPUT	5	= OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 2)
INPUT	43	= FLASH SENSE
INPUT	44	= CABINET CIRCUITRY STOP TIME CONTROL INPUT
INPUT	60	= STOP TIME
INPUT	61	= SPECIAL FUNCTION ALARM 1
INPUT	64	= PREEMPT 7

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #7 IS REACHED.

```
   PREEMPTION  #7  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0 ¦   X
2  15  0.0  0.0 ¦X    X
3 255  0.0  0.0 ¦ X   X
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦ X   X
EXIT CALLS      ¦
               OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                 ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW    ¦ X XX
OMIT OVERLAPS:            ¦   X
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 3 of 9

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Prepared for the Offices of:
Transportation Mobility and Safety Division, ITS & Signals Management Section — State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T4

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 6 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 10, 11, 12, 13, 14, and 15.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #10 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS ON
AND RED CLEAR ON PHASE #6   IS ON
AND YELLOW ON PHASE    #1   IS OFF
AND YELLOW ON PHASE    #2   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #3   ON
SET INPUT   ASSIGNMENT #62  ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG         #4   ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
LOGICAL I/O COMMAND #11 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS OFF
OR  RED CLEAR ON PHASE #6   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #3   OFF
SET INPUT   ASSIGNMENT #62  OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
LOGICAL I/O COMMAND #12 (+/-COMMAND#)
IF  LOGIC FLAG         #3   IS ON
OR  INPUT   ASSIGNMENT #44  IS ON
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58  ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 6 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
LOGICAL I/O COMMAND #13 (+/-COMMAND#)
IF  LOGIC FLAG         #3   IS OFF
AND INPUT   ASSIGNMENT #44  IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58  OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
LOGICAL I/O COMMAND #14 (+/-COMMAND#)
IF  LOGIC FLAG         #4   IS ON
AND INPUT   ASSIGNMENT #43  IS OFF
            SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #63  ON
```

NOTE: LATCHED LOGIC FLAG #4 ACTUATES PREEMPT 8 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
LOGICAL I/O COMMAND #15 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6   IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #4   OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 6 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

- INPUT 6 = OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 6)
- INPUT 43 = FLASH SENSE
- INPUT 44 = CABINET CIRCUITRY STOP TIME CONTROL INPUT
- INPUT 58 = STOP TIME
- INPUT 62 = SPECIAL FUNCTION ALARM 2
- INPUT 63 = PREEMPT 8

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #8 IS REACHED.

```
   PREEMPTION  #8  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0 ¦   X
2  15  0.0  0.0 ¦X    X
3 255  0.0  0.0 ¦ X   X
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦ X   X
EXIT CALLS      ¦
             OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                 ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW    ¦ X XX
OMIT OVERLAPS:            ¦   X
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 4 of 9

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PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7EE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T4

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-13.5

INPUT REASSIGNMENT PROGRAMMING DETAIL

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 12 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 21, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:43  VEHICLE DETECTOR ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  --> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............12 ........ DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:43  NOT ENABLED
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)...................
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 16 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 23, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:44  VEHICLE DETECTOR ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  --> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............16 ........ DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:44  NOT ENABLED
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 5 of 9

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PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey C7FE51B522454FA...
SIGNATURE — DATE 10/4/2021

SIG. INVENTORY NO. 03-0585T4

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM CABINET STOP TIME TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 44, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:82  STOP TIME ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................44
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y  --> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y ........ DEFAULT PROGRAMMING
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:82  NOT ENABLED
INPUT ASSIGNMENT #..................44
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 60, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................60
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ........ DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y  --> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0    STOP TIME
INPUT ASSIGNMENT #..................60
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 6

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 58, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................58
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ........ DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y  --> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0    STOP TIME
INPUT ASSIGNMENT #..................58
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 1

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 61, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................61
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ........ DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1  --> ENTER A "1" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #..................61
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 6 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T4

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-13.7

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 62, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................62
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.......................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....2 --> ENTER A "2" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #.................62
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.......................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....2
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 64, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................64
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.......................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................7 --> ENTER PREEMPT 7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.................64
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.......................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 63, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................63
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.......................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................8 --> ENTER PREEMPT 8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.................63
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.......................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 7 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Traffic Engineering Branch, Traffic Engineering Unit, Transportation Mobility and Safety Division, N.C. Department of Transportation, Traffic Signals Management Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 4/4/2021
C7FE55D8632F54FA... DATE

SIG. INVENTORY NO. 03-0585T4

11:22:15 AM
U:\Projects\3300B_Signals\Design\Electrical Details*Temporary Design\R3300B_sig_ele_03-0585T4.dgn
User:rhornbright

ADVANCE BEACON #1 OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #33 (PIN 35) IS REACHED.

```
PAGE:1  C1 PIN:35  NOT ENABLED
OUTPUT ASSIGNMENT #................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE IN WHICH AT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:35  NOT ENABLED
SELECT BEACON INDEX (1-4)...........1
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA. THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:35  ADVANCE BEACON
OUTPUT ASSIGNMENT #................33
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #34 (PIN 36) IS REACHED.

```
PAGE:1  C1 PIN:36  NOT ENABLED
OUTPUT ASSIGNMENT #................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:36  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......33
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA. THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:36  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #................34
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 33 = Ø2 Ped Yellow
OUTPUT 34 = Ø6 Ped Yellow

ADVANCE BEACON PROGRAMMING DETAIL

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '2' (OUTPUT BEACON SETTINGS).

```
          OUTPUT BEACON SETTINGS
TRIGGER PHASES: |12345678910111213141516
BEACON #1 OFF   | X
BEACON #2 OFF   |     X
BEACON #3 OFF   |
BEACON #4 OFF   |
            BEACON |   1   2   3   4
OFF DELAY TIME (0-255)|   0   0   0   0
ON DELAY TIME  (0-255)|   0   0   0   0
STOP-TIME HOLD (0-255)|   2   2   0   0
```

SCROLL DOWN TO VIEW ALL DATA

NOTICE STOP TIME HOLD

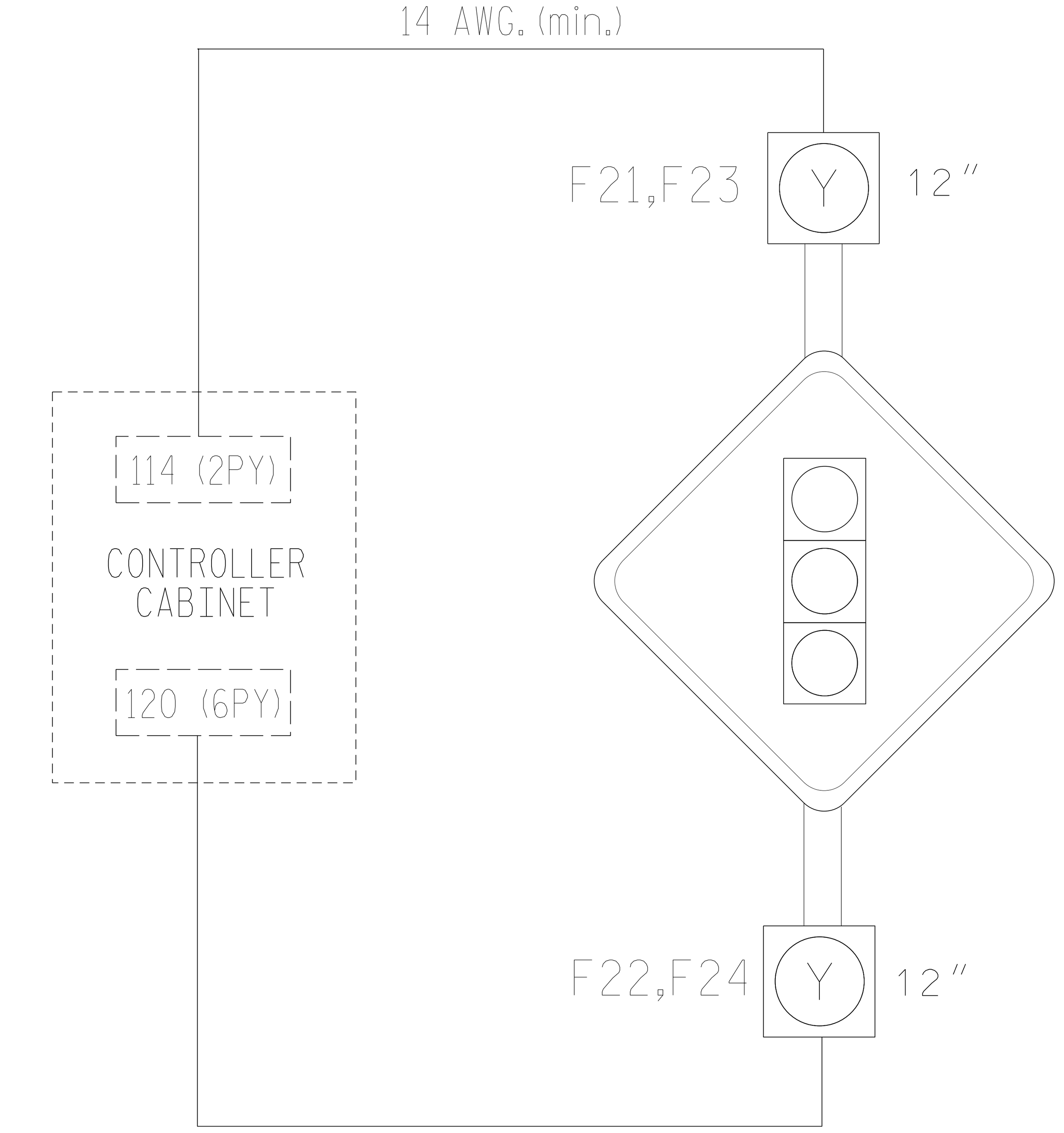
ADVANCE BEACON PROGRAMMING COMPLETE

NOTE: AN OUTPUT HAS TO BE ASSIGNED AS AN ADVANCE BEACON IN ORDER FOR PROPER OPERATION TO OCCUR. SEE OUTPUT ASSIGNMENT DETAIL ON THIS SHEET.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

ADVANCE BEACON #1 WIRING DETAIL

(wire flashers as shown below)



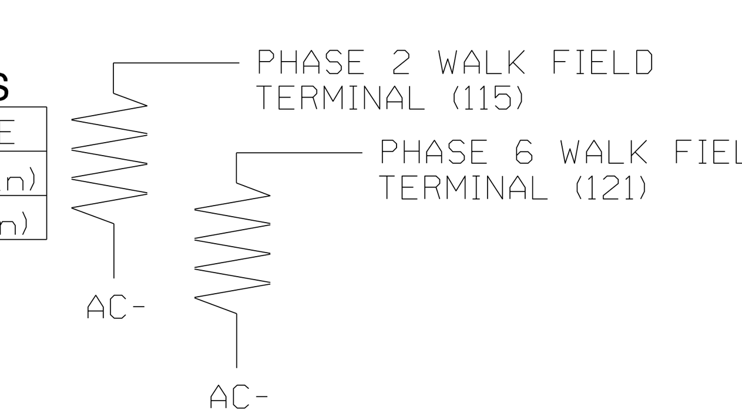
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 114 (2PY) AND TERMINAL 12Ø (6PY).
2. INSERT LOADSWITCH FOR S3 AND S9.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 33 AND 34 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.ØK - 3.ØK	1ØW (min)



Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 8 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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License No. F-0672

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
SIGNATURE | DATE

SIG. INVENTORY NO. 03-0585T4

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-13.9

ADVANCE BEACON #2
OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #35 (PIN 37) IS REACHED.

```
PAGE:1  C1 PIN:37  NOT ENABLED
OUTPUT ASSIGNMENT #.................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON.....................Y
OUT OF PHASE FLASHER..............._
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................_
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................_
PHASE ON............................_
PHASE NEXT.........................._
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE AT WHICH IT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:37  NOT ENABLED
SELECT BEACON INDEX (1-4)..........2
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:37  ADVANCE BEACON
OUTPUT ASSIGNMENT #.................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON.....................Y
OUT OF PHASE FLASHER..............._
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................_
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................_
PHASE ON............................_
PHASE NEXT.........................._
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #36 (PIN 38) IS REACHED.

```
PAGE:1  C1 PIN:38  NOT ENABLED
OUTPUT ASSIGNMENT #.................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON....................._
OUT OF PHASE FLASHER.....Y
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................_
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................_
PHASE ON............................_
PHASE NEXT.........................._
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:38  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).....35
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

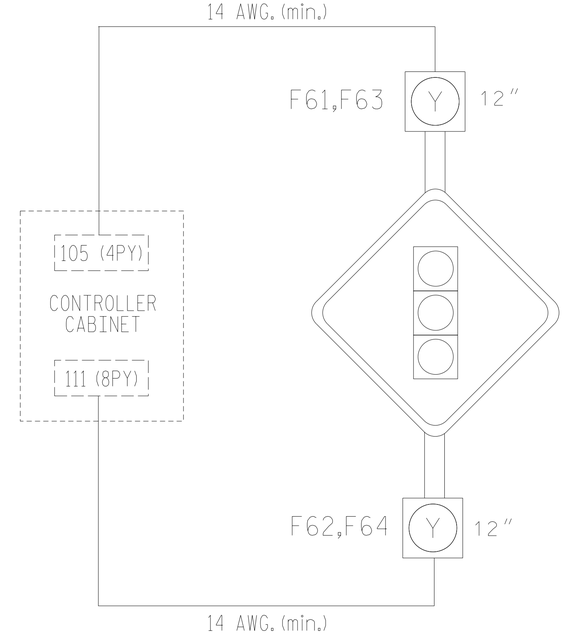
```
PAGE:1  C1 PIN:38  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #.................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE......................_
PEDESTRIAN PHASE...................._
VEHICLE OVERLAP....................._
PEDESTRIAN OVERLAP.................._
WATCHDOG............................_
DETECTOR RESET......................_
ADVANCE BEACON....................._
OUT OF PHASE FLASHER.....Y
CONTROLLER FLASH...................._
RUN FREE............................_
RESERVED............................_
PREEMPT............................._
SOFT PREEMPT........................_
ANY PREEMPT........................_
COORDINATION PLAN..................._
OFFSET.............................._
PHASE CHECK........................_
PHASE ON............................_
PHASE NEXT.........................._
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 35 = Ø4 Ped Yellow
OUTPUT 36 = Ø8 Ped Yellow

ADVANCE BEACON #2 WIRING DETAIL

(wire flashers as shown below)

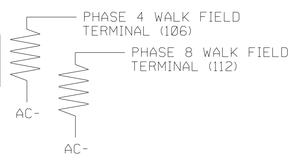


IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 105 (4PY) AND TERMINAL 111 (8PY).
2. INSERT LOADSWITCH FOR S6 AND S12.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 35 AND 36 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: Ø3-0585T4
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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Temporary Design 4 - TMP Phase I - Step 4
Electrical Detail - Sheet 9 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

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

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

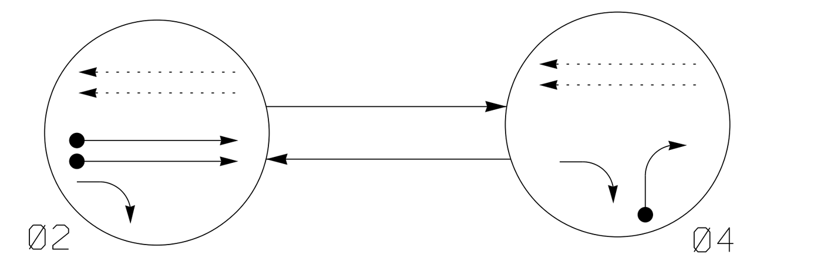
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FB5B9327454FA... DATE

SIG. INVENTORY NO. 03-0585T4

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

DRE FAILURE PREEMPT

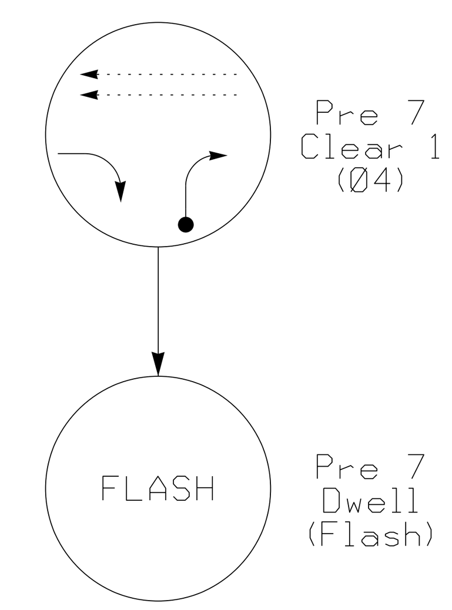


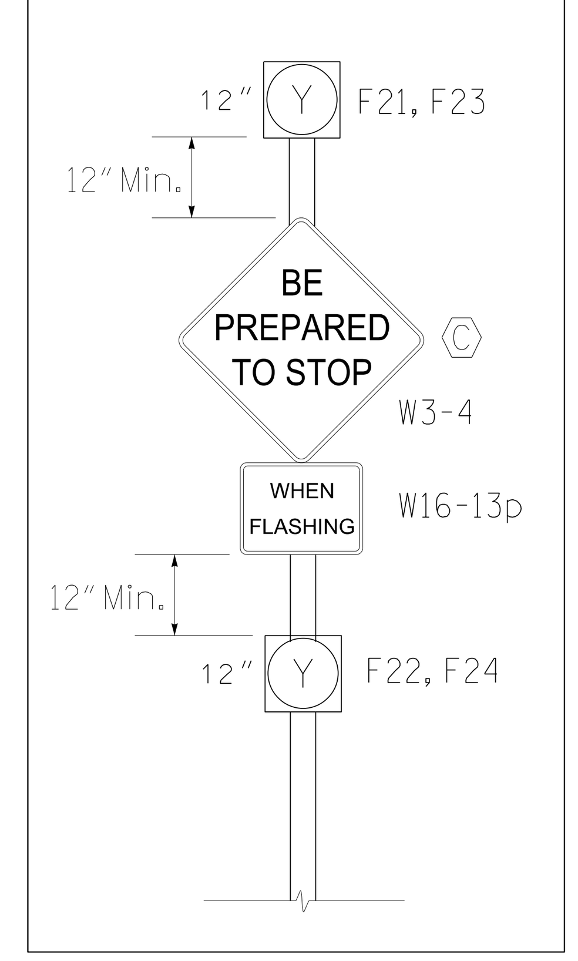
TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2	Ø4	Pre 7 CLEAR 1	Pre 7 DWELL	FLASH
22, 23	G	R	R	Y	Y
24	F/Y →	F/Y →	F/Y →	Y →	Y →
41, 42	R	→	→	R	R

TABLE OF OPERATION

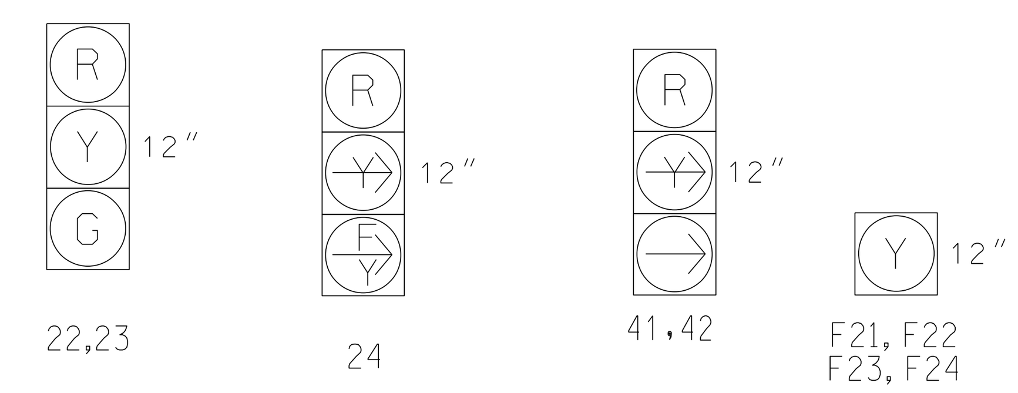
SIGNAL FACE	INTERVAL 1	2
F21, F23	ON	OFF
F22, F24	OFF	ON

FIGURE 1



SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

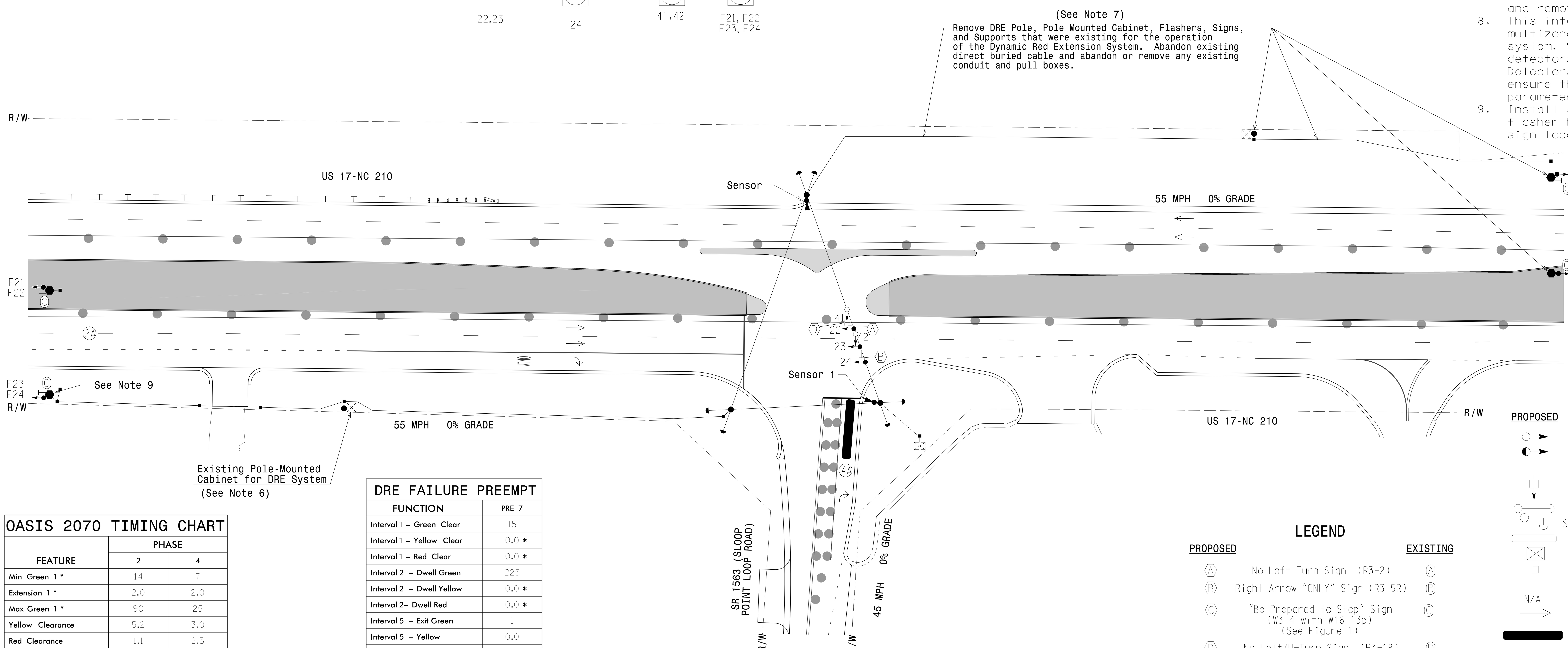
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
4A	6X40	0	✳	✳	4	Y	Y	-	-	15	-	✳

✳ Multizone Microwave Detection Area
Multizone microwave detector unit locations should be confirmed in the field by the contractor in order to provide detection of the areas indicated.

2 Phase
Fully Actuated
(Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Disconnect and remove signal heads numbered 11, 21, 51, 61, & 62.
5. Reposition existing signal heads numbered 22, 23, 24, 41 & 42.
6. Contractor shall maintain DRE system and signal ahead flashers during all phases of construction.
7. The existing DRE system for the southbound lanes shall disconnected and removed.
8. This intersection features a multizone microwave detection system. Shown locations of detectors are conceptual only. Detectors should be placed to ensure the desired operation parameters are achieved.
9. Install sign W3-3 in advance of the flasher beacon. See TMP plan for sign location.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Detection Area	N/A
	Construction Zone	N/A
	Drums	N/A

LEGEND

PROPOSED		EXISTING
(A)	No Left Turn Sign (R3-2)	(A)
(B)	Right Arrow "ONLY" Sign (R3-5R)	(B)
(C)	"Be Prepared to Stop" Sign (W3-4 with W16-13p) (See Figure 1)	(C)
(D)	No Left/U-Turn Sign (R3-18)	(D)
	Out of Pavement Detector	

OASIS 2070 TIMING CHART

FEATURE	PHASE 2	4
Min Green 1 *	14	7
Extension 1 *	2.0	2.0
Max Green 1 *	90	25
Yellow Clearance	5.2	3.0
Red Clearance	1.1	2.3
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	-	-
Max Variable Initial *	-	-
Time Before Reduction *	-	-
Time To Reduce *	-	-
Minimum Gap	-	-
Recall Mode	MIN RECALL	-
Vehicle Call Memory	-	-
Dual Entry	-	-
Simultaneous Gap	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

DRE FAILURE PREEMPT

FUNCTION	PRE 7
Interval 1 – Green Clear	15
Interval 1 – Yellow Clear	0.0 *
Interval 1 – Red Clear	0.0 *
Interval 2 – Dwell Green	225
Interval 2 – Dwell Yellow	0.0 *
Interval 2– Dwell Red	0.0 *
Interval 5 – Exit Green	1
Interval 5 – Yellow	0.0
Interval 5– Red	0.0
Exit Phase(s)	2
Priority	High
Delay Time	0
Minimum Green Before Pre	20
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0 *
Red Clear Before Pre	0.0 *
Dwell Min Time	20
Flash Dwell Interval?	Y
Enable Backup Protection	N
Ped Clear Through Yellow	N
Omit Overlaps	-

* Time defaults to time used for phase during normal operation.

MULTIZONE MICROWAVE DETECTION SYSTEM

FUNCTION	Sensor 1	
Channel	1 (2A)	2✳
Phase	2	2
Direction of Travel	NB	NB
Detection Zone (ft)	100-600	75-240
Enable Speed	Y	Y
Speed Range (mph)	35-100	50-100
Enable Estimated Time of Arrival	Y	N
Estimated Time of Arrival (sec)	1.0-6.5	-
Extend Time (sec)	-	3.0

✳ If output is present during associated phase's red clear, a minimum 3 second stop time will be placed on the red clearance interval.

Signal Upgrade
Temporary Design 5 - TMP Phase II - Step 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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License No. F-0672

Prepared for the Offices of:
Transportation Mobility and Safety Division – State of North Carolina Department of Transportation – Signal Design Section
750 N.Greenfield Pkwy, Garner, NC 27529

SCALE 0 – 40, 1" = 40'

US 17-NC 210 at SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	D Harris
PREPARED BY:	J Hambright	REVIEWED BY:	R M Muncey

REVISIONS	INIT.	DATE

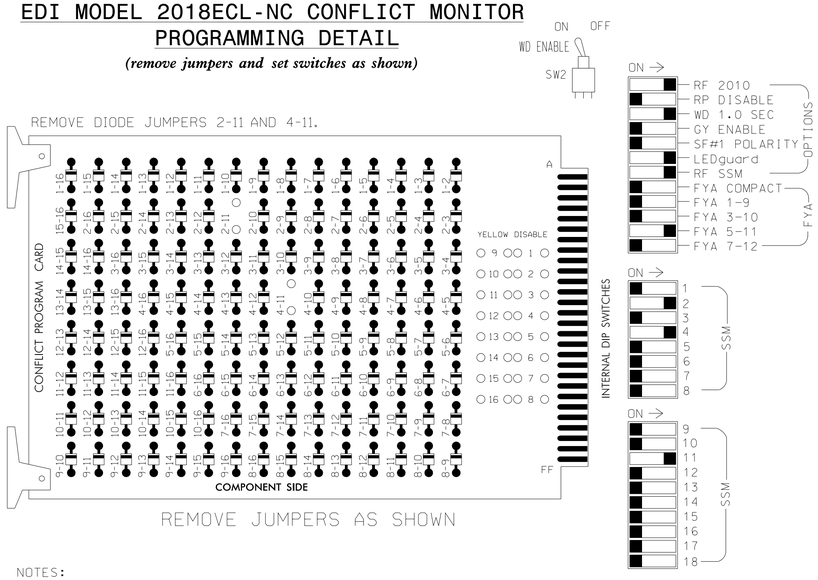
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B622454FA...
DATE

SIG. INVENTORY NO. 03-0585T5

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

■ = 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. Enable Simultaneous Gap-Out for all Phases.
3. Program phase 2 for Startup In Green.
4. Program phase 2 for Yellow Flash.
5. If this signal will be managed by an ATMS software, enable controller and detector logging for all enabled detectors.
6. The cabinet and controller are part of the US 17 - NC 210 (Topsail) CLS. Signal System #10324.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S2,S3✱,S5,S9✱,AUX S4
PHASES USED.....2,4
OVERLAP "A".....NOT USED
OVERLAP "B".....NOT USED
OVERLAP "C".....2+4
OVERLAP "D".....NOT USED
✱ Used for Advance Beacon only

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-14.1

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3		S4	S5	S6		S7	S8	S9		S10	S11	S12		AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13		3	4	14		5	6	15		7	8	16		9	10	17	11	12	18
PHASE	1	2	2 PED	ADVANCE BEACON	3	4	4 PED	ADVANCE BEACON	5	6	6 PED	ADVANCE BEACON	7	8	8 PED	ADVANCE BEACON	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	22,23	NU	F21 F23	NU	41,42	NU	~~F61~~ ~~F63~~	NU	NU	NU	F22 F24	NU	NU	NU	~~F62~~ ~~F64~~	NU	NU	NU	24★	NU	NU
RED		128				101														A114		
YELLOW		129																				
GREEN		130																				
RED ARROW						102																
YELLOW ARROW						103														A115		
FLASHING YELLOW ARROW																				A116		
GREEN ARROW																						
✋																						
PED YELLOW				✱✱ 114				~~✱✱~~ 105				✱✱ 120				~~✱✱~~ 111						
🚶			✱				~~✱~~				✱				~~✱~~							

NU = Not Used

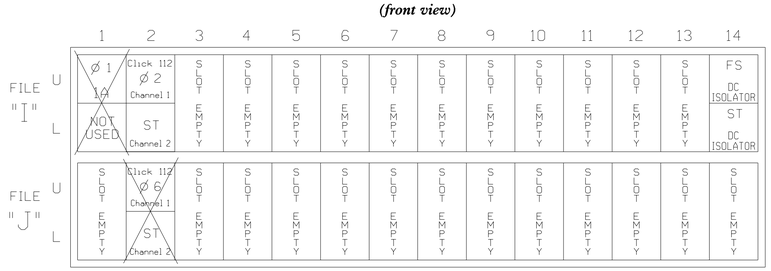
✱ Denotes install load resistor. See load resistor installation details sheets 1, 8 and 9.

✱✱ Special advance beacons will be wired to S3Y, ~~S6Y~~, S9Y, and ~~S12Y~~. See wiring and programming details on sheets 8 and 9 of this electrical detail.

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
ST = STOP TIME

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)

SPECIAL DETECTOR NOTE

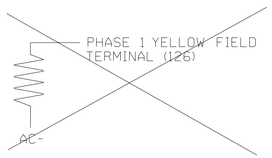
Install a Multizone Microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

Remove jumpers from I1-W to J4-W on rear of input file to prevent unwanted calls.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 1 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Traffic Engineering Branch, Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FE5D3B62754FA... DATE

SIG. INVENTORY NO. 03-0585T5

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-14.2

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

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

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          ¦12345678910111213141516
VEH OVL PARENTS:¦XX
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦ X
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).........2
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
```

NOTICE VEH OVL EXT

NOTICE GREEN FLASH

NOTICE GREEN EXTENSION

PRESS '+' TWICE

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          ¦12345678910111213141516
VEH OVL PARENTS:¦ X X
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦ X
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).........2
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
```

NOTICE VEH OVL EXT

NOTICE GREEN FLASH

NOTICE GREEN EXTENSION

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
 PHASE:          ¦12345678910111213141516
VEH OVL PARENTS:¦ X X
VEH OVL NOT VEH:¦
VEH OVL NOT PED:¦
VEH OVL GRN EXT:¦ X
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).........2
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
```

NOTICE VEH OVL EXT

NOTICE GREEN FLASH

NOTICE GREEN EXTENSION

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
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Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 2 of 9

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REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
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SIG. INVENTORY NO. 03-0585T5

11:23:59 AM
U:*Traffic*Signals*Design*Electrical Details*Temporary Design*R3300B_sig_ele_03-0585T5.dgn
User:jhambright

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 2 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 4, 5, 6, 7, 8, and 9.

2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS ON
AND RED CLEAR ON PHASE #2  IS ON
AND YELLOW ON PHASE    #6  IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #1  ON
SET INPUT  ASSIGNMENT #61  ON
    DELAY FOR  30.0 SECONDS
SET LOGIC FLAG         #2  ON
```

PRESS '+'

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

```
LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS OFF
OR  RED CLEAR ON PHASE #2  IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #1  OFF
SET INPUT  ASSIGNMENT #61  OFF
```

PRESS '+'

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 2 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

```
LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  LOGIC FLAG         #1  IS ON
OR  INPUT   ASSIGNMENT #44 IS ON
            SCROLL DOWN
THEN:
SET INPUT  ASSIGNMENT #60 ON
```

PRESS '+'

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 2 "OR" CABINET STOP TIME INPUT IS ACTIVE.

```
LOGICAL I/O COMMAND #7  (+/-COMMAND#)
IF  LOGIC FLAG         #1  IS OFF
AND INPUT   ASSIGNMENT #44 IS OFF
            SCROLL DOWN
THEN:
SET INPUT  ASSIGNMENT #60 OFF
```

PRESS '+'

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

```
LOGICAL I/O COMMAND #8  (+/-COMMAND#)
IF  LOGIC FLAG         #2  IS ON
AND INPUT   ASSIGNMENT #43 IS OFF
            SCROLL DOWN
THEN:
SET INPUT  ASSIGNMENT #64 ON
```

PRESS '+'

NOTE: LATCHED LOGIC FLAG #2 ACTUATES PREEMPT 7 AND PLACES CONTROLLER IN FLASH.

```
LOGICAL I/O COMMAND #9  (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #5  IS OFF
            SCROLL DOWN
THEN:
SET LOGIC FLAG         #2  OFF
```

LOGIC PROGRAMMING COMPLETE

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 2 DRE APPLICATION

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

- INPUT 5 = OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 2)
- INPUT 43 = FLASH SENSE
- INPUT 44 = CABINET CIRCUITRY STOP TIME CONTROL INPUT
- INPUT 60 = STOP TIME
- INPUT 61 = SPECIAL FUNCTION ALARM 1
- INPUT 64 = PREEMPT 7

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #7 IS REACHED.

```
   PREEMPTION  #7  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0 ¦   X
2 255  0.0  0.0 ¦ X
3   0  0.0  0.0 ¦
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦ X
EXIT CALLS      ¦
              OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                 ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW    ¦   X
OMIT OVERLAPS:            ¦
```

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 3 of 9

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PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey C7FE51B522454FA... 10/4/2021
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T5

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-14.4

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL FOR PHASE 6 DYNAMIC RED EXTENSION SYSTEM

(program controller as shown below)

1. From main menu press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS), scroll to the bottom of the menu and enable ACT logic commands 10, 11, 12, 13, 14, and 15.
2. From main menu press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).

```
 LOGICAL I/O COMMAND #10 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6  IS ON
AND RED CLEAR ON PHASE #6  IS ON
AND YELLOW ON PHASE    #1  IS OFF
AND YELLOW ON PHASE    #2  IS OFF
             SCROLL DOWN
THEN:
SET LOGIC FLAG         #3  ON
SET INPUT   ASSIGNMENT #62 ON
    DELAY FOR   30.0 SECONDS
SET LOGIC FLAG         #4  ON
```

NOTE: STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

NOTE: ALSO SETS CONTROLLER FLASH (LOGIC #2) IF THE STOP TIME INPUT FROM WAVETRONIX SYSTEM IS ACTIVE FOR LONGER THAN 30 SECONDS DURING PHASE 2 RED CLEAR.

PRESS '+'

```
 LOGICAL I/O COMMAND #11 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6  IS OFF
OR  RED CLEAR ON PHASE #6  IS OFF
             SCROLL DOWN
THEN:
SET LOGIC FLAG         #3  OFF
SET INPUT   ASSIGNMENT #62 OFF
```

NOTE: RESET STOP TIME AND SPECIAL FUNCTION ALARM LOGIC FOR PHASE 6 APPROACH. (FOR DYNAMIC RED EXTENSION SYSTEM)

PRESS '+'

```
 LOGICAL I/O COMMAND #12 (+/-COMMAND#)
IF  LOGIC FLAG         #3  IS ON
OR  INPUT   ASSIGNMENT #44 IS ON
             SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58 ON
```

NOTE: LOGIC TO SWITCH STOP TIME "ON" IF DYNAMIC RED SYSTEM PHASE 6 "OR" CABINET STOP TIME INPUT IS ACTIVE.

PRESS '+'

```
 LOGICAL I/O COMMAND #13 (+/-COMMAND#)
IF  LOGIC FLAG         #3  IS OFF
AND INPUT   ASSIGNMENT #44 IS OFF
             SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #58 OFF
```

NOTE: LOGIC TO SWITCH STOP TIME "OFF" WHEN ALL INPUTS ARE OFF.

PRESS '+'

```
 LOGICAL I/O COMMAND #14 (+/-COMMAND#)
IF  LOGIC FLAG         #4  IS ON
AND INPUT   ASSIGNMENT #43 IS OFF
             SCROLL DOWN
THEN:
SET INPUT   ASSIGNMENT #63 ON
```

NOTE: LATCHED LOGIC FLAG #4 ACTUATES PREEMPT 8 AND PLACES CONTROLLER IN FLASH.

PRESS '+'

```
 LOGICAL I/O COMMAND #15 (+/-COMMAND#)
IF  INPUT   ASSIGNMENT #6  IS OFF
             SCROLL DOWN
THEN:
SET LOGIC FLAG         #4  OFF
```

NOTE: RESETS LATCHED LOGIC FLAGS.

NOTE: END LOGIC FOR PHASE 6 DRE APPLICATION

LOGIC PROGRAMMING COMPLETE

! NOTE: THIS LOGIC IS BASED UPON CHANGES MADE TO INPUT MAPS WHICH ARE SHOWN ON SHEETS 5, 6 AND 7 OF THIS ELECTRICAL DETAIL. !

INPUT/OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

INPUT 24	= OUTPUT FROM SUPERVISOR RELAY (PHASE 6)
INPUT 23	= OUTPUT FROM DYNAMIC RED EXTENSION SYSTEM (PHASE 6)
INPUT 43	= FLASH SENSE
INPUT 44	= CABINET CIRCUITRY STOP TIME CONTROL INPUT
INPUT 58	= STOP TIME
INPUT 62	= SPECIAL FUNCTION ALARM 2
INPUT 63	= PREEMPT 8
OUTPUT 24	= PHASE 7 GREEN/SUPERVISOR RELAY CONTROL

FLASH PREEMPTION PROGRAMMING DETAIL FOR PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

THIS PREEMPT PLACES THE CONTROLLER IN FLASH IF RED EXTENSION IS GREATER THAN 30 SECONDS, OR IF NO DRE EVENT OCCURS FOR 168 HOURS.

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTIONS). PRESS 'NEXT' UNTIL PREEMPTION #8 IS REACHED.

```
   PREEMPTION  #8  SETTINGS (NEXT:1-10)
INTERVAL/TIMING ¦  CLEAR/DWELL PHASES
  GRN YEL  RED  ¦12345678910111213141516
1  15  0.0  0.0 ¦    X
2  15  0.0  0.0 ¦X     X
3 255  0.0  0.0 ¦ X    X
4   0  0.0  0.0 ¦
5   1  0.0  0.0 ¦ X    X
EXIT CALLS      ¦
             OPTIONS
PRIORITY (Y/N TO SELECT) ............HIGH
DELAY TIMER (0-255 SEC) .............0.0
MIN GREEN BEFORE PRE (0= DEFAULT)....20
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) .........20
DWELL MAX TIMER (0=OFF,1-255MIN) ....0
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
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? ...............Y
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............Y
OVERLAPS:                ¦ ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW   ¦ X X
OMIT OVERLAPS:           ¦   X
```

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 4 of 9

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REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T5

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-14.5

INPUT REASSIGNMENT PROGRAMMING DETAIL

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 12 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 21, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:43  VEHICLE DETECTOR ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   ➡ ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............12 ........ DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA ↓

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT ➡

```
PAGE:1  C1 PIN:43  NOT ENABLED
INPUT ASSIGNMENT #..................5
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM VEH. DET. 16 TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 23, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:44  VEHICLE DETECTOR ........ DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   ➡ ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64).............16 ........ DEFAULT PROGRAMMING
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCROLL DOWN TO VIEW ALL DATA ↓

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT ➡

```
PAGE:1  C1 PIN:44  NOT ENABLED
INPUT ASSIGNMENT #..................6
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 5 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
SIGNATURE DATE

SIG. INVENTORY NO. 03-0585T5

11:24:32 AM
U:\Traffic\Signals\Design\Electrical Details\Temporary Design\R3300B_sig_ele_03-0585T5.dgn
User:jhambright

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM CABINET STOP TIME TO "NOT ENABLED"

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 44, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:82  STOP TIME            ---- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................44
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   ---> ENTER A "Y" FOR NOT ENABLED
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y   ---- DEFAULT PROGRAMMING
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:82  NOT ENABLED
INPUT ASSIGNMENT #..................44
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 60, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED          ---- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................60
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   ---- DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y   ---> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0    STOP TIME
INPUT ASSIGNMENT #..................60
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO USER DEFINED STOP TIME PHASE 6

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 58, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED          ---- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................58
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   ---- DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y   ---> ENTER A "Y" IN STOP TIME FIELD
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0    STOP TIME
INPUT ASSIGNMENT #..................58
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................Y
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 1

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 61, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED          ---- DEFAULT PROGRAMMING
INPUT ASSIGNMENT #..................61
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC)............ 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y   ---- DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1   ---> ENTER A "1" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #..................61
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED........................._
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........1
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE).._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 6 of 9

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 43239 REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585T5

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-14.7

INPUT REASSIGNMENT PROGRAMMING DETAIL CONTINUED...

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO SF ALARM 2

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 62, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................62
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....2 → ENTER A "2" FOR SPECIAL FUNCTION ALARM
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   SPECIAL FUNCTION ALAR
INPUT ASSIGNMENT #.................62
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....2
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 7 (DRE PHASE 2)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 64, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................64
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................7 → ENTER PREEMPT 7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.................64
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................7
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT REASSIGNMENT PROGRAMMING DETAIL FROM "NOT ENABLED" TO PREEMPT 8 (DRE PHASE 6)

(program controller as shown below)

1. FROM MAIN MENU PRESS '5' (INPUTS).
2. WITH CURSOR IN "INPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE INPUT ASSIGNMENT NUMBER 63, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

SCROLL DOWN TO VIEW ALL DATA

```
PAGE:1  C1 PIN:0   NOT ENABLED ..... DEFAULT PROGRAMMING
INPUT ASSIGNMENT #.................63
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............. 0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................Y ..... DEFAULT PROGRAMMING
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................8 → ENTER PREEMPT 8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

SCREEN SHOULD NOW APPEAR AS SHOWN TO THE RIGHT

```
PAGE:1  C1 PIN:0   PREEMPT
INPUT ASSIGNMENT #.................63
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED.........................
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................8
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)...  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

INPUT PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 7 of 9

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License No. F-0672

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Traffic Engineering Branch, Mobility and Safety Division, North Carolina Department of Transportation, Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 | Pender County | Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FB5D8D9234AFA... DATE

SIG. INVENTORY NO. 03-0585T5

11:24:54 AM
User:rmuncey
User:rmuncey
U:\Projects\Designs\Design\Electrical Details\Temporary Design\R3300B_sig_ele_03-0585t5.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-14.8

ADVANCE BEACON #1 OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #33 (PIN 35) IS REACHED.

```
PAGE:1  C1 PIN:35  NOT ENABLED
OUTPUT ASSIGNMENT #................33
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...1.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...50
MODE (O=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................_
PEDESTRIAN PHASE..................._
VEHICLE OVERLAP...................._
PEDESTRIAN OVERLAP.................._
WATCHDOG..........................._
DETECTOR RESET....................._
ADVANCE BEACON.....................Y
OUT OF PHASE FLASHER..............._
CONTROLLER FLASH..................._
RUN FREE..........................._
RESERVED..........................._
PREEMPT............................_
SOFT PREEMPT......................._
ANY PREEMPT........................_
COORDINATION PLAN.................._
OFFSET............................._
PHASE CHECK........................_
PHASE ON..........................._
PHASE NEXT........................._
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE IN WHICH AT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:35  NOT ENABLED
SELECT BEACON INDEX (1-4)...........1
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA. THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:35  ADVANCE BEACON
OUTPUT ASSIGNMENT #................33
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...1.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...50
MODE (O=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED........................_
VEHICLE PHASE......................_
PEDESTRIAN PHASE..................._
VEHICLE OVERLAP...................._
PEDESTRIAN OVERLAP.................._
WATCHDOG..........................._
DETECTOR RESET....................._
ADVANCE BEACON.....................Y
OUT OF PHASE FLASHER..............._
CONTROLLER FLASH..................._
RUN FREE..........................._
RESERVED..........................._
PREEMPT............................_
SOFT PREEMPT......................._
ANY PREEMPT........................_
COORDINATION PLAN.................._
OFFSET............................._
PHASE CHECK........................_
PHASE ON..........................._
PHASE NEXT........................._
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #34 (PIN 36) IS REACHED.

```
PAGE:1  C1 PIN:36  NOT ENABLED
OUTPUT ASSIGNMENT #................34
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...0.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...0
MODE (O=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED........................Y
VEHICLE PHASE......................_
PEDESTRIAN PHASE..................._
VEHICLE OVERLAP...................._
PEDESTRIAN OVERLAP.................._
WATCHDOG..........................._
DETECTOR RESET....................._
ADVANCE BEACON....................._
OUT OF PHASE FLASHER...............Y
CONTROLLER FLASH..................._
RUN FREE..........................._
RESERVED..........................._
PREEMPT............................_
SOFT PREEMPT......................._
ANY PREEMPT........................_
COORDINATION PLAN.................._
OFFSET............................._
PHASE CHECK........................_
PHASE ON..........................._
PHASE NEXT........................._
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:36  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......33
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA. THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:36  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #................34
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...0.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...0
MODE (O=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED........................_
VEHICLE PHASE......................_
PEDESTRIAN PHASE..................._
VEHICLE OVERLAP...................._
PEDESTRIAN OVERLAP.................._
WATCHDOG..........................._
DETECTOR RESET....................._
ADVANCE BEACON....................._
OUT OF PHASE FLASHER...............Y
CONTROLLER FLASH..................._
RUN FREE..........................._
RESERVED..........................._
PREEMPT............................_
SOFT PREEMPT......................._
ANY PREEMPT........................_
COORDINATION PLAN.................._
OFFSET............................._
PHASE CHECK........................_
PHASE ON..........................._
PHASE NEXT........................._
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 33 = Ø 2 Ped Yellow
OUTPUT 34 = Ø 6 Ped Yellow

ADVANCE BEACON PROGRAMMING DETAIL

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '2' (OUTPUT BEACON SETTINGS).

```
        OUTPUT BEACON SETTINGS
TRIGGER PHASES: |12345678910111213141516
BEACON #1 OFF   | X
BEACON #2 OFF   |
BEACON #3 OFF   |
BEACON #4 OFF   |
           BEACON |  1   2   3   4
OFF DELAY TIME (0-255)|  0   0   0   0
ON DELAY TIME  (0-255)|  0   0   0   0
STOP-TIME HOLD (0-255)|  2   0   0   0
```

NOTICE REMOVE BEACON #2

NOTICE STOP TIME HOLD

SCROLL DOWN TO VIEW ALL DATA

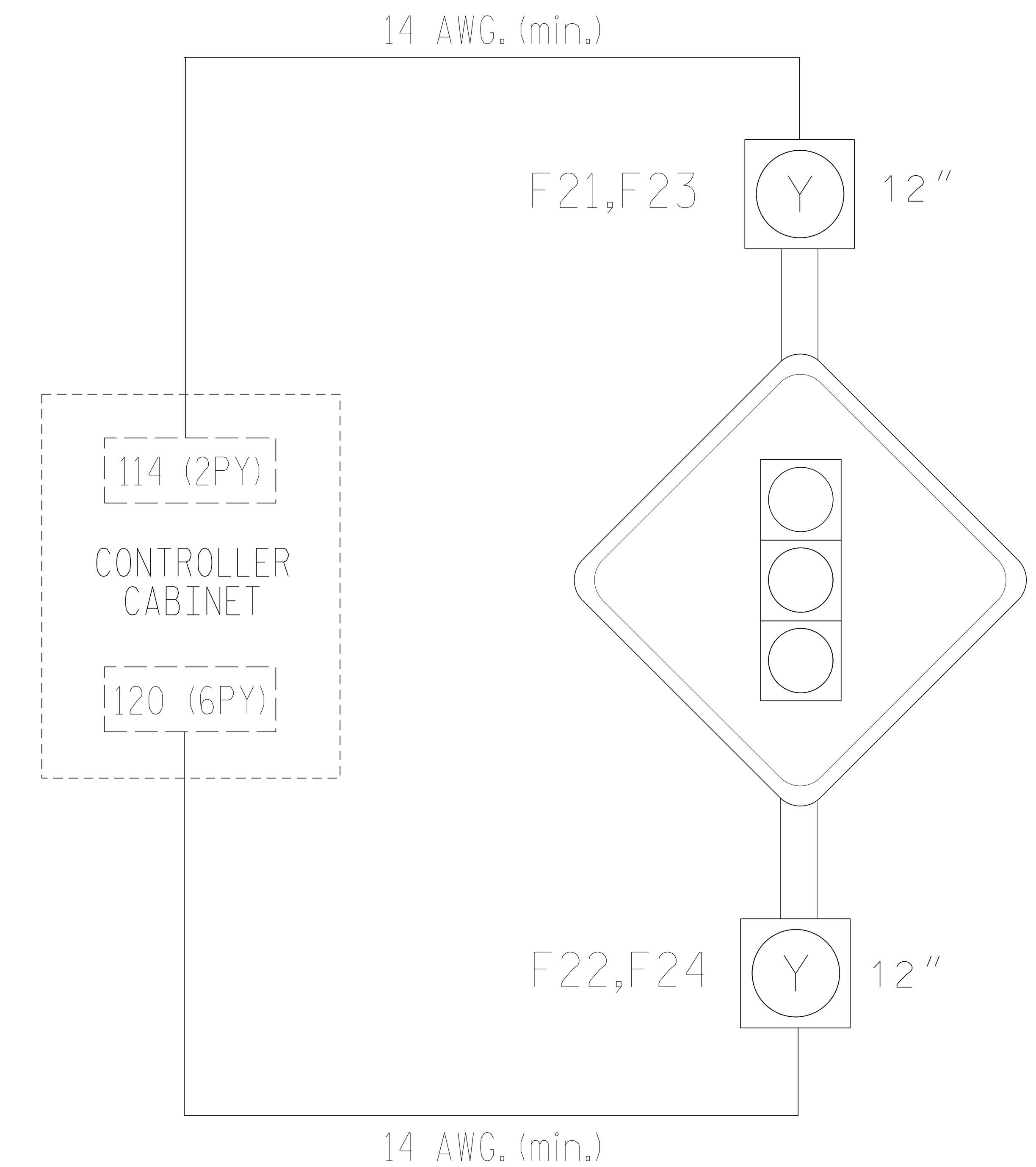
ADVANCE BEACON PROGRAMMING COMPLETE

NOTE: AN OUTPUT HAS TO BE ASSIGNED AS AN ADVANCE BEACON IN ORDER FOR PROPER OPERATION TO OCCUR. SEE OUTPUT ASSIGNMENT DETAIL ON THIS SHEET.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

ADVANCE BEACON #1 WIRING DETAIL

(wire flashers as shown below)



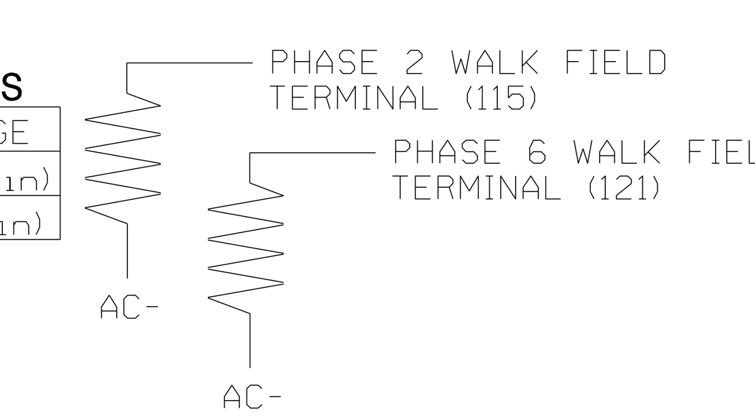
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 114 (2PY) AND TERMINAL 120 (6PY).
2. INSERT LOADSWITCH FOR S3 AND S9.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 33 AND 34 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 8 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:

Transportation Mobility and Safety Division — ITS & Signals Management Section — North Carolina Department of Transportation

750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3	Pender County	Near Topsail Beach	
PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL
43239
ENGINEER
REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7E538602954FA

SIG. INVENTORY NO. 03-0585T5

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-14.9

ADVANCE BEACON #2
OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #35 (PIN 37) IS REACHED.

```
PAGE:1  C1 PIN:37  NOT ENABLED
OUTPUT ASSIGNMENT #................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE AT WHICH IT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:37  NOT ENABLED
SELECT BEACON INDEX (1-4)...........2
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:37  ADVANCE BEACON
OUTPUT ASSIGNMENT #................35
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...1.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...50
MODE (0=SOLID,1=FLASH).............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #36 (PIN 38) IS REACHED.

```
PAGE:1  C1 PIN:38  NOT ENABLED
OUTPUT ASSIGNMENT #................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:38  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......35
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' KEY AFTER ENTERING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

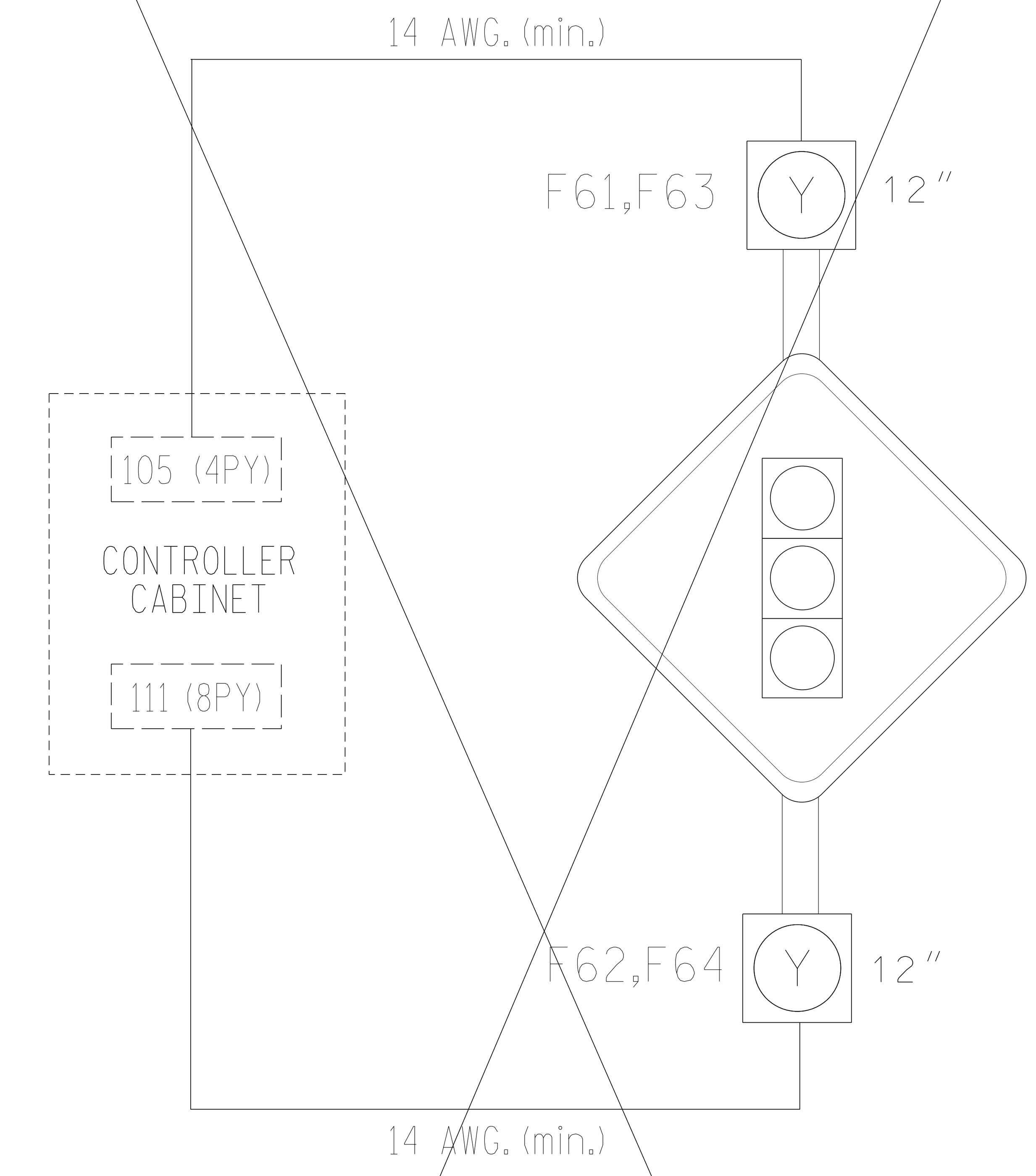
```
PAGE:1  C1 PIN:38  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #................36
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).............0
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

OUTPUT REFERENCE SCHEDULE

OUTPUT 35 = Ø4 Ped Yellow
OUTPUT 36 = Ø8 Ped Yellow

ADVANCE BEACON #2 WIRING DETAIL

(wire flashers as shown below)



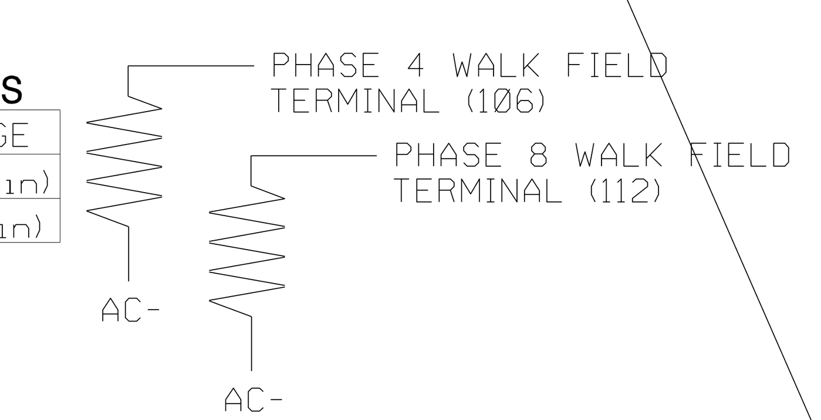
IMPORTANT

1. REMOVE, TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 105 (4PY) AND TERMINAL 111 (6PY).
2. INSERT LOADSWITCH FOR S6 AND S12.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN IN LOAD RESISTOR INSTALLATION DETAIL ON THIS SHEET.
4. TO ACTIVATE SIGN OPERATION AS INDICATED ON THE SIGNAL PLANS, REASSIGN OUTPUT 35 AND 36 AS SHOWN ON THIS SHEET.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585T5
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Temporary Design 5 - TMP Phase II - Step 2
Electrical Detail - Sheet 9 of 9

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division — ITS & Signals Management Section — State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

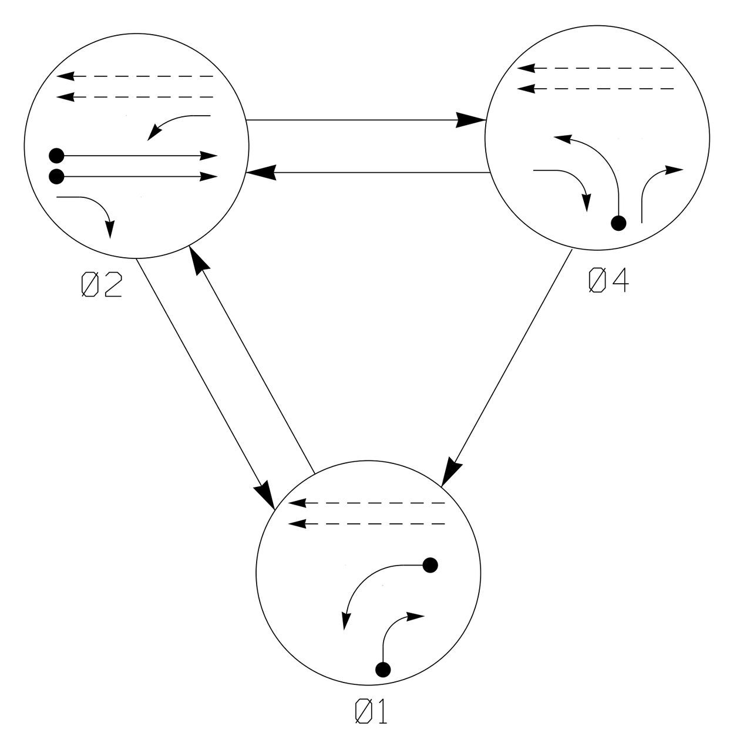
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B622454FA...
DATE

SIG. INVENTORY NO. 03-0585T5

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-15.0

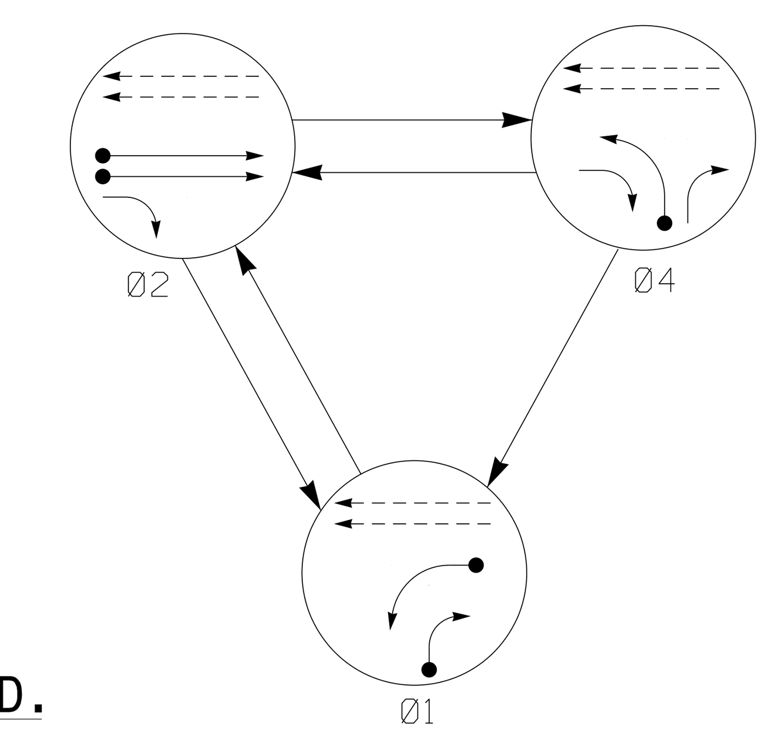
DEFAULT PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1	PHASE Ø2	PHASE Ø4	FLASH
11, 12	←	F/Y ←	← R	← Y
21, 22	R	G	R	Y
23	R	F/Y →	F/Y →	Y →
41	R	R	G ←	R
42	R	R	G	R
43	→	R	→	R

ALTERNATE PHASING DIAGRAM



ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1	PHASE Ø2	PHASE Ø4	FLASH
11, 12	←	← R	← R	← Y
21, 22	R	G	R	Y
23	R	F/Y →	F/Y →	Y →
41	R	R	G ←	R
42	R	R	G	R
43	→	R	→	R

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.

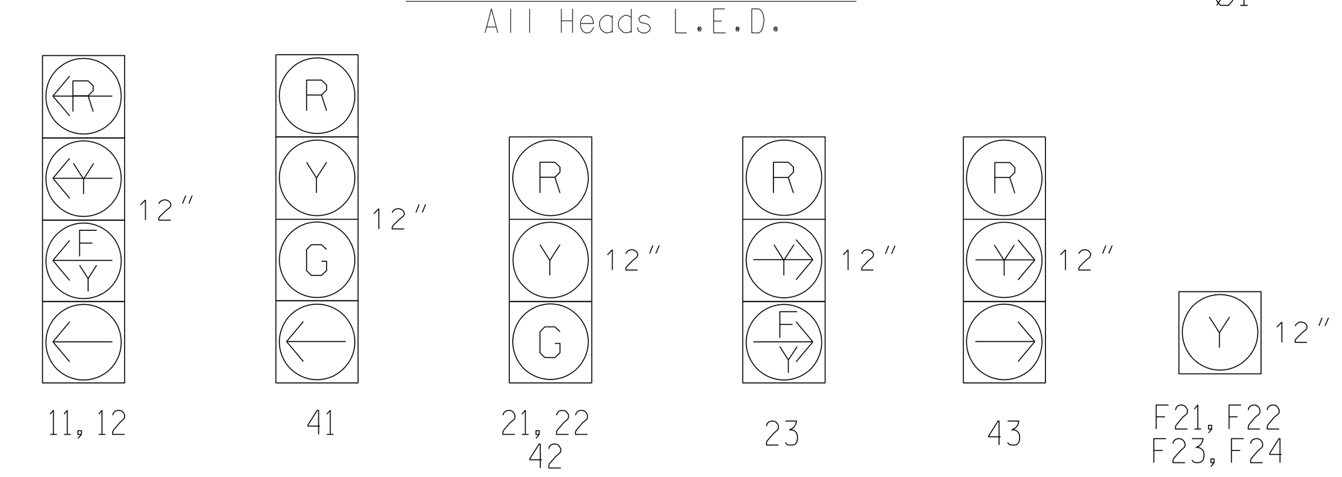


TABLE OF OPERATION

SIGNAL FACE	INTERVAL 1	INTERVAL 2
F21, F23	ON	OFF
F22, F24	OFF	ON

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS: LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING: PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	✳	✳	1	Y	Y	-	-	★15	-	Y
1B	6X40	0	✳	✳	1	Y	Y	-	-	15	-	Y
4A	6X40	0	✳	✳	4	Y	Y	-	-	3	-	Y

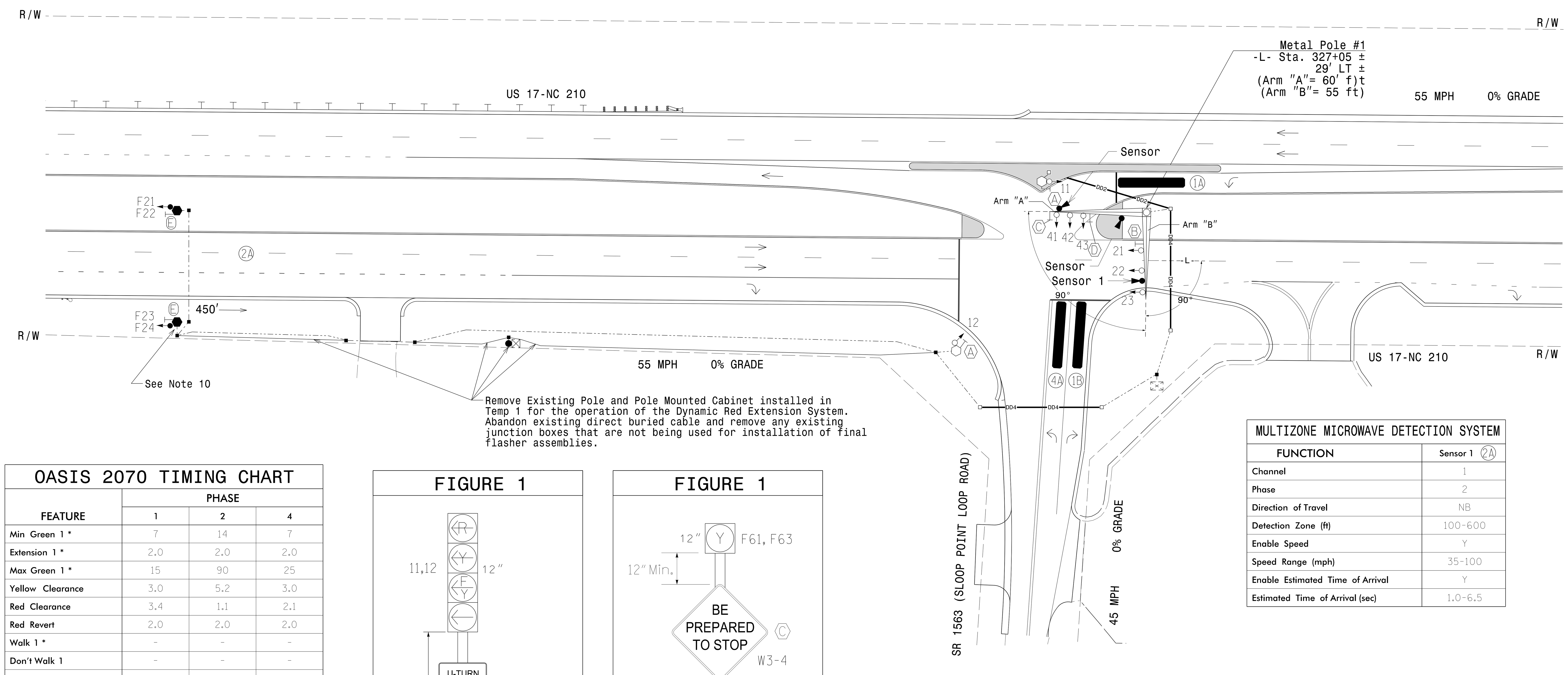
★ Disable delay during Alternate Phasing Operation.

✳ Multizone Microwave Detection Area
Multizone microwave detector unit locations should be confirmed in the field by the contractor in order to provide detection of the areas indicated.

3 Phase
Fully Actuated
(US 17 - NC 210 (Topsail) CLS)
Signal System #10324

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Set all detector units to presence mode.
5. Flash beacons 3 seconds prior to end of phase 2 green.
6. The Division Traffic Engineer will determine the hours of use for each phasing plan.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
8. This intersection features a multizone microwave detection system. Shown locations of detectors are conceptual only. Detectors should be placed to ensure the desired operation parameters are achieved.
9. Relocate existing multizone microwavedetector sensors.
10. Install sign W3-3 in advance of the flasher beacon. See TMP plan for sign location.
11. Closed Loop System Data:
    Controller Asset #: 0585



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Metal Pole with Mastarm	
DD#	Directional Drill (#) x 2" Conduit	N/A
	Detection Area	N/A
	Type III Signal Pedestal	
A	"U-Turn Yield to Right Turn" Sign (R10-16) (See Figure 1)	A
B	No Left /U-Turn Sign (R3-18)	B
C	Left Arrow "ONLY" Sign (R3-5L)	C
D	Right Arrow "ONLY" Sign (R3-5R)	D
E	"Be Prepared to Stop" Sign (W3-4 with W16-13p) (See Figure 2)	E
	Out of Pavement Detector	

MULTIZONE MICROWAVE DETECTION SYSTEM

FUNCTION	Sensor 1 2A
Channel	1
Phase	2
Direction of Travel	NB
Detection Zone (ft)	100-600
Enable Speed	Y
Speed Range (mph)	35-100
Enable Estimated Time of Arrival	Y
Estimated Time of Arrival (sec)	1.0-6.5

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	PHASE 2	PHASE 4
Min Green 1 *	7	14	7
Extension 1 *	2.0	2.0	2.0
Max Green 1 *	15	90	25
Yellow Clearance	3.0	5.2	3.0
Red Clearance	3.4	1.1	2.1
Red Revert	2.0	2.0	2.0
Walk 1 *	-	-	-
Don't Walk 1	-	-	-
Seconds Per Actuation *	-	-	-
Max Variable Initial *	-	-	-
Time Before Reduction *	-	-	-
Time To Reduce *	-	-	-
Minimum Gap	-	-	-
Recall Mode	-	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	-
Dual Entry	-	-	-
Simultaneous Gap	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

FIGURE 1

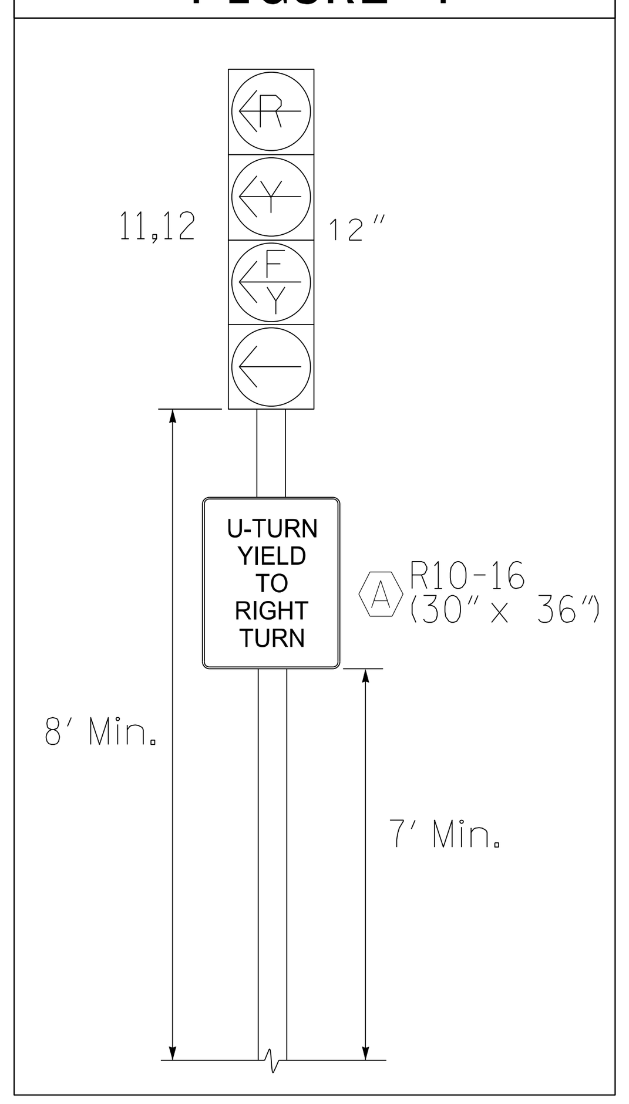
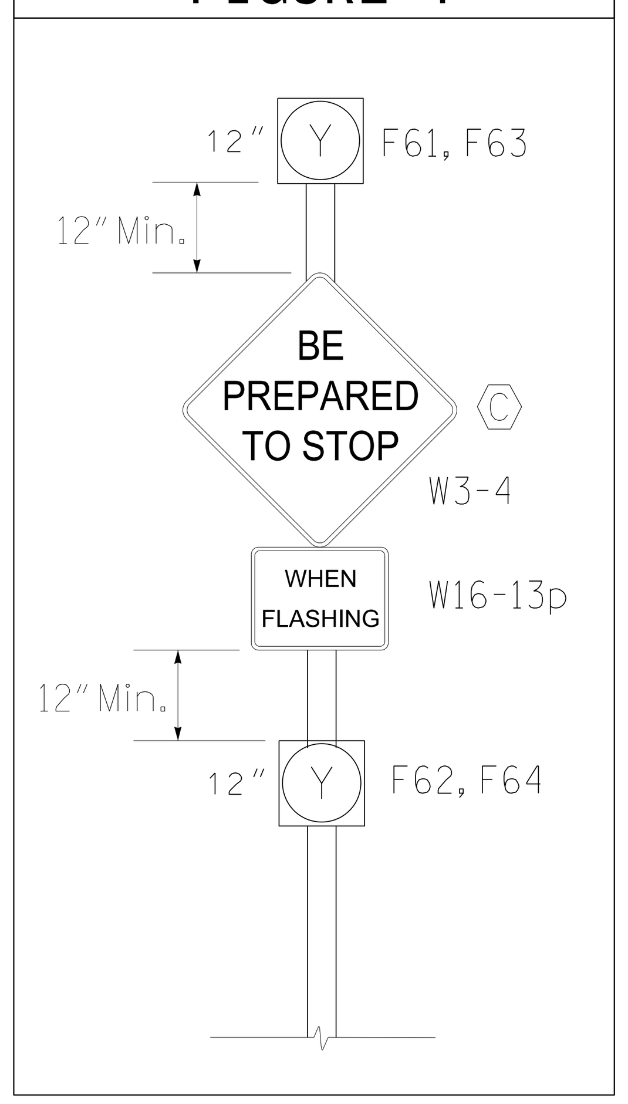


FIGURE 1



Signal Upgrade - Final Design

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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License No. F-0672

Prepared for the Offices of:
Transportation Mobility and Safety Division — Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40
1" = 40'

US 17-NC 210 at SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE: October 2021	REVIEWED BY: D Harris
PREPARED BY: J Hambright	REVIEWED BY: R M Muncey

REVISIONS | INIT. | DATE

NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

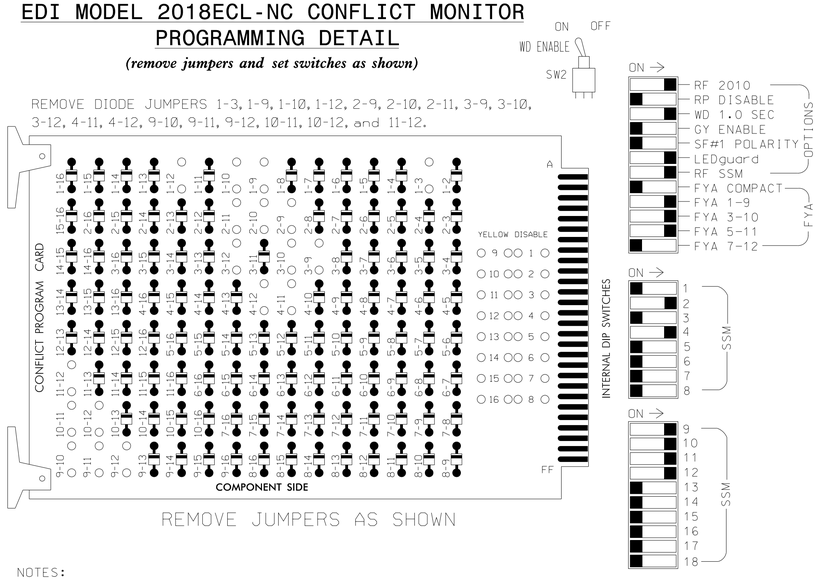
DocuSigned by: Regina M. Muncey 1/2021
C7E8B1B52345FA...

DATE

SIG. INVENTORY NO. 03-0585

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

■ = 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. Enable Simultaneous Gap-Out for all Phases.
3. Program phase 2 for Startup In Green.
4. Program phases 2 for Yellow Flash, and overlap 1 and 2 as Wag Overlaps.
5. If this signal will be managed by an ATMS software, enable controller and detector logging for all enabled detectors.
6. The cabinet and controller are part of the US 17 - NC 210 (Topsail) CLS. Signal System #10324.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3*,S4,S5,S9*,AUX S1,AUX S2,AUX S4,AUX S5
PHASES USED.....1,2,4
OVERLAP "A".....1+2
OVERLAP "B".....1+2
OVERLAP "C".....2+4
OVERLAP "D".....1+4
OVERLAP "G".....1

* Used for advance beacons

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-15.1

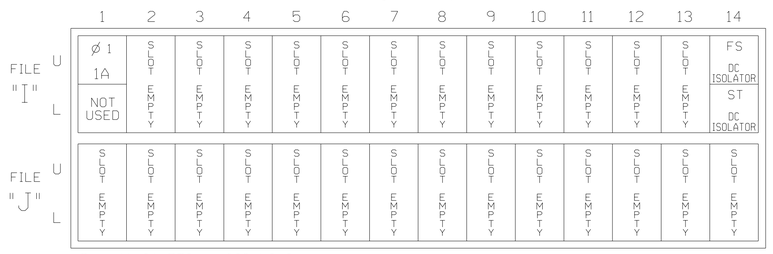
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3		S4	S5		S6	S7	S8	S9		S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13		3	4		14	5	6	15		7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	ADVANCE BEACON	★★ OLG	4		4 PED	5	6	6 PED	ADVANCE BEACON	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11 ★	21,22	NU	F21, F23	12 ★	41	42	NU	NU	NU	NU	F22, F24	NU	NU	NU	11 ★	12 ★	NU	23 ★	43 ★	NU
RED		128				101	101												A114	A101	
YELLOW	*	129			*	102	102														
GREEN		130				103	103														
RED ARROW																A121	A124				
YELLOW ARROW																A122	A125		A115	A102	
FLASHING YELLOW ARROW																A123	A126		A116		
GREEN ARROW	127				118	103														A103	
✋																					
PED YELLOW				** 114								** 120									
🚶			*								*										

NU = Not Used
★ See pictorial of head wiring in detail this sheet.
* Denotes install load resistor. See load resistor installation detail this sheet.
★★ Requires special programming and output mapping. See Sheets 2 and 3.
** A Special Advanced Beacon is wired to S3-Y and S6-Y. See wiring and programming detail on Sheet 5 of this electrical detail.

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	**	IIU	56	18	1	1	Y	Y			15
	-	IIU	56	18 ★	51	1	Y	Y			

★ See Input Page Assignment programming detail on sheet 4.
** Multizone Microwave Detection Zone. See Special Detector Note.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

SPECIAL DETECTOR NOTE

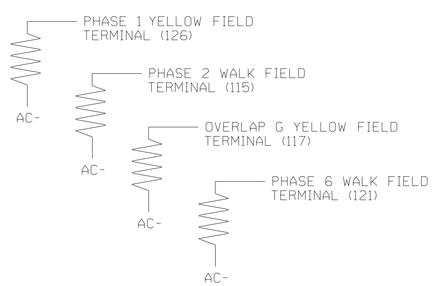
Install a Multizone Microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For Detection Zone 1A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation. Inputs associated with these slots are compatible with time of day instructions located on sheet 4 of this electrical detail.

LOAD RESISTOR INSTALLATION DETAIL

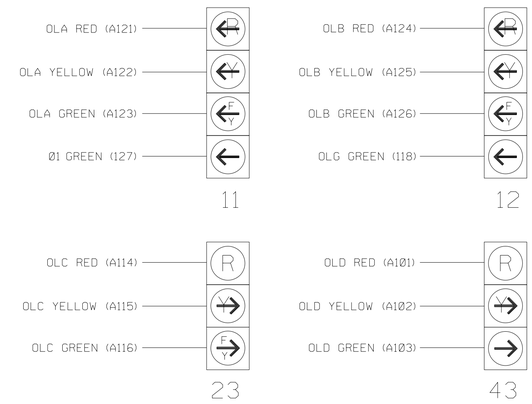
(install resistors as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal heads 11 and 12 requires special logic programming. See sheet 2 for programming instructions.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: Ø3-Ø585
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

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Final Design
Electrical Detail - Sheet 1 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

Prepared for the Offices of: NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Traffic Signal Management Section

750 N.Greenfield Pkwy.Garner,NC 27529

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE5D3B62C84F4... DATE

SIG. INVENTORY NO. 03-0585

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-15.2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. 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.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
  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
```

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

PRESS '+'

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

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #52 OFF
```

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

PRESS '+'

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

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #51 ON
```

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

PRESS '+'

```
  LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  ACTIVE OVERLAP     #7  IS ON
AND RED CLEAR ON OVL   #7  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #47 ON
 SET OUTPUT  ASSIGNMENT #48 OFF
```

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM OVERLAP 7 TO PHASE 2 (HEAD 12).

PRESS '+'

```
  LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  ACTIVE OVERLAP     #7  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #49 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING OVERLAP 7 (HEAD 12).

PRESS '+'

```
  LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  YELLOW ON OVERLAP  #7  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #48 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM OVERLAP 7 (HEAD 12).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

OUTPUT 47 = Overlap G Red
OUTPUT 48 = Overlap G Yellow
OUTPUT 49 = Overlap G Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

(program controller as shown below)

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

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :XX
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  : X
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).........2
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
```

← NOTICE GREEN FLASH
← NOTICE VEH OVL GRN EXT

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :XX
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  : X
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).........2
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
```

← NOTICE GREEN FLASH
← NOTICE VEH OVL GRN EXT

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  : X X
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
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
```

← NOTICE GREEN FLASH

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :X  X
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  :
STARTUP COLOR:  _ RED  _ YELLOW  _ GREEN
FLASH COLORS:   _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........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
```

PRESS '+' THREE TIMES

```
 PAGE 1: VEHICLE OVERLAP 'G' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :X
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  :
STARTUP COLOR:  _ RED  _ YELLOW  _ GREEN
FLASH COLORS:   _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........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
```

OVERLAP PROGRAMMING COMPLETE

OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS). PRESS 'NEXT' TO ADVANCE TO PAGE 2.

PRESS '+'

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :X
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  :
STARTUP COLOR:  _ RED  _ YELLOW  _ GREEN
FLASH COLORS:   _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........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
```

PRESS '+'

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :X
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  :
STARTUP COLOR:  _ RED  _ YELLOW  _ GREEN
FLASH COLORS:   _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........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
```

PRESS '+'

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  : X X
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
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
```

← NOTICE GREEN FLASH

PRESS '+'

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'D' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :X  X
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  :
STARTUP COLOR:  _ RED  _ YELLOW  _ GREEN
FLASH COLORS:   _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........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
```

PRESS '+' THREE TIMES

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'G' SETTINGS
  PHASE:          :1234567891011121314151 6
VEH OVL PARENTS:  :X
VEH OVL NOT VEH:  :
VEH OVL NOT PED:  :
VEH OVL GRN EXT:  :
STARTUP COLOR:  _ RED  _ YELLOW  _ GREEN
FLASH COLORS:   _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........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
```

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0585
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Final Design
Electrical Detail - Sheet 2 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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License No. F-0672

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
North Carolina Department of Transportation — Mobility and Safety Division — Traffic Engineering Branch — Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
C7F5E51B922454F8... DATE

SIG. INVENTORY NO. 03-0585

OUTPUT ASSIGNMENT PROGRAMMING DETAIL: OVERLAP "G" TO LOADSWITCH "S4"

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT (ASSIGNMENTS).
2. WITH CURSOR IN "OUTPUT ASSIGNMENT #" FIELD, USE + KEY TO FIND THE OUTPUT ASSIGNMENT NUMBER 6, AS SHOWN BELOW.
3. PROGRAM CONTROLLER AS SHOWN:

```
PAGE:1  C1 PIN:7  VEHICLE PHASE
OUTPUT ASSIGNMENT #.................6
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE........................Y
PEDESTRIAN PHASE....................._
VEHICLE OVERLAP......................Y
PEDESTRIAN OVERLAP..................._
WATCHDOG............................._
DETECTOR RESET......................._
ADVANCE BEACON......................._
OUT OF PHASE FLASHER................._
CONTROLLER FLASH....................._
RUN FREE............................._
RESERVED............................._
PREEMPT.............................._
SOFT PREEMPT........................._
ANY PREEMPT.........................._
COORDINATION PLAN...................._
OFFSET..............................._
PHASE CHECK.........................._
PHASE ON............................._
PHASE NEXT..........................._
```

THE OUTPUT IS SET AS A VEHICLE PHASE BY DEFAULT. THIS "Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1  C1 PIN:7  VEHICLE PHASE
SELECT VEHICLE OVERLAP (A=1,P=16)...7
SELECT COLOR(0=RED,1=YEL,2=GRN).....0
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:7  VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.................6
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE........................_
PEDESTRIAN PHASE....................._
VEHICLE OVERLAP......................Y
PEDESTRIAN OVERLAP..................._
WATCHDOG............................._
DETECTOR RESET......................._
ADVANCE BEACON......................._
OUT OF PHASE FLASHER................._
CONTROLLER FLASH....................._
RUN FREE............................._
RESERVED............................._
PREEMPT.............................._
SOFT PREEMPT........................._
ANY PREEMPT.........................._
COORDINATION PLAN...................._
OFFSET..............................._
PHASE CHECK.........................._
PHASE ON............................._
PHASE NEXT..........................._
```

PRESS "+" KEY FOR OUTPUT 7

```
PAGE:1  C1 PIN:8  VEHICLE PHASE
OUTPUT ASSIGNMENT #.................7
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE........................Y
PEDESTRIAN PHASE....................._
VEHICLE OVERLAP......................Y
PEDESTRIAN OVERLAP..................._
WATCHDOG............................._
DETECTOR RESET......................._
ADVANCE BEACON......................._
OUT OF PHASE FLASHER................._
CONTROLLER FLASH....................._
RUN FREE............................._
RESERVED............................._
PREEMPT.............................._
SOFT PREEMPT........................._
ANY PREEMPT.........................._
COORDINATION PLAN...................._
OFFSET..............................._
PHASE CHECK.........................._
PHASE ON............................._
PHASE NEXT..........................._
```

THE OUTPUT IS SET AS A VEHICLE PHASE BY DEFAULT. THIS "Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1  C1 PIN:8  VEHICLE PHASE
SELECT VEHICLE OVERLAP (A=1,P=16)...7
SELECT COLOR(0=RED,1=YEL,2=GRN).....1
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:8  VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.................7
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE........................_
PEDESTRIAN PHASE....................._
VEHICLE OVERLAP......................Y
PEDESTRIAN OVERLAP..................._
WATCHDOG............................._
DETECTOR RESET......................._
ADVANCE BEACON......................._
OUT OF PHASE FLASHER................._
CONTROLLER FLASH....................._
RUN FREE............................._
RESERVED............................._
PREEMPT.............................._
SOFT PREEMPT........................._
ANY PREEMPT.........................._
COORDINATION PLAN...................._
OFFSET..............................._
PHASE CHECK.........................._
PHASE ON............................._
PHASE NEXT..........................._
```

PRESS "+" KEY FOR OUTPUT 8

```
PAGE:1  C1 PIN:9  VEHICLE PHASE
OUTPUT ASSIGNMENT #.................8
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE........................Y
PEDESTRIAN PHASE....................._
VEHICLE OVERLAP......................Y
PEDESTRIAN OVERLAP..................._
WATCHDOG............................._
DETECTOR RESET......................._
ADVANCE BEACON......................._
OUT OF PHASE FLASHER................._
CONTROLLER FLASH....................._
RUN FREE............................._
RESERVED............................._
PREEMPT.............................._
SOFT PREEMPT........................._
ANY PREEMPT.........................._
COORDINATION PLAN...................._
OFFSET..............................._
PHASE CHECK.........................._
PHASE ON............................._
PHASE NEXT..........................._
```

THE OUTPUT IS SET AS A VEHICLE PHASE BY DEFAULT. THIS "Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1  C1 PIN:9  VEHICLE PHASE
SELECT VEHICLE OVERLAP (A=1,P=16)...7
SELECT COLOR(0=RED,1=YEL,2=GRN).....2
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:9  VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.................8
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)..............0
SELECT ASSIGNMENT:
NOT ENABLED.........................._
VEHICLE PHASE........................_
PEDESTRIAN PHASE....................._
VEHICLE OVERLAP......................Y
PEDESTRIAN OVERLAP..................._
WATCHDOG............................._
DETECTOR RESET......................._
ADVANCE BEACON......................._
OUT OF PHASE FLASHER................._
CONTROLLER FLASH....................._
RUN FREE............................._
RESERVED............................._
PREEMPT.............................._
SOFT PREEMPT........................._
ANY PREEMPT.........................._
COORDINATION PLAN...................._
OFFSET..............................._
PHASE CHECK.........................._
PHASE ON............................._
PHASE NEXT..........................._
```

OUTPUT PROGRAMMING COMPLETE

FLASHER CIRCUIT MODIFICATION DETAIL

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

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
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: 03-0585
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Final Design
Electrical Detail - Sheet 3 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021
C7FE51B522454FA...
DATE

SIG. INVENTORY NO. 03-0585

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-15.4

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 1A

(program controller as shown below)

NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.

FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 18 IS REACHED.

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................18
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....................
VEHICLE DETECTOR (1-64).............1
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)....................._
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)...................._
FLASH SENSE (Y/N).................._
DOOR OPEN (Y/N)...................._
MANUAL CONTROL ENABLE (Y/N)........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)....._
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

→ ENTER '51' TO REASSIGN THE VEHICLE DETECTOR FOR THIS INPUT →

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................18
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....................
VEHICLE DETECTOR (1-64).............51
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)....................._
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)...................._
FLASH SENSE (Y/N).................._
DOOR OPEN (Y/N)...................._
MANUAL CONTROL ENABLE (Y/N)........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)....._
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

(LOOP 1A - PHASE 1)

PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 1A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #51.

```
VEHICLE DETECTOR #51  SETTINGS (+-,1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR.....................N
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦123456789101112131415 16
PHASES ASSIGNED ¦
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT).................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC).................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

→ ENTER 'Y' FOR ENABLE DETECTOR →

→ ENTER '1' FOR PHASES ASSIGNED →

→ ENSURE DELAY IS '0' →

```
VEHICLE DETECTOR #51  SETTINGS (+-,1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR.....................Y
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦123456789101112131415 16
PHASES ASSIGNED ¦X
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT).................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC).................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

DETECTOR PROGRAMMING COMPLETE

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

PHASING	INPUTS PAGE	OVERLAPS PAGE
ACTIVE PAGES REQUIRED TO RUN DEFAULT PHASING	1	1
ACTIVE PAGES REQUIRED TO RUN ALTERNATE PHASING	2	2

NOTE:
PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAPS PAGE 2: Modifies overlap parent phases for heads 11 and 12 to run protected turns only.

INPUTS PAGE 2: Reduces delay time for phase 1 call on loop 1A to 0 seconds.

NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Final Design
Electrical Detail - Sheet 4 of 5

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NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY
DocuSigned by: Regina M. Muncey 10/4/2021
CTE4B8B6B34AFE... DATE

SIG. INVENTORY NO. 03-0585

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG-15.5

ADVANCE BEACON OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #33 (PIN 35) IS REACHED.

```
PAGE:1  C1 PIN:35  NOT ENABLED
OUTPUT ASSIGNMENT #.................33
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...1.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...50
MODE (O=SOLID,1=FLASH)..............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE IN WHICH IT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:35  NOT ENABLED
SELECT BEACON INDEX (1-4)...........1
```

WHEN A 'Y' IS ENTERED FOR 'ADVANCE BEACON' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'ADVANCE BEACON' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:35  ADVANCE BEACON
OUTPUT ASSIGNMENT #.................33
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...1.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...50
MODE (O=SOLID,1=FLASH)..............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................Y
OUT OF PHASE FLASHER................
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #34 (PIN 36) IS REACHED.

```
PAGE:1  C1 PIN:36  NOT ENABLED
OUTPUT ASSIGNMENT #.................34
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...1.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...50
MODE (O=SOLID,1=FLASH)..............1
SELECT ASSIGNMENT:
NOT ENABLED.........................Y
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

THE FIRST THREE PROGRAMMING ROWS DEFINE THE OUTPUT TO FLASH, ALONG WITH THE RATE IN WHICH IT WILL FLASH.

THE NOT ENABLED 'Y' WILL REMAIN UNTIL THE FUNCTION OF THIS OUTPUT IS CHANGED. DO NOT ENTER AN 'N'.

```
PAGE:1  C1 PIN:36  NOT ENABLED
SELECT OUTPUT ASSIGNMENT (1-64).......34
```

WHEN A 'Y' IS ENTERED FOR 'OUT OF PHASE FLASHER' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'OUT OF PHASE FLASHER' AS SHOWN BELOW.

```
PAGE:1  C1 PIN:36  OUT OF PHASE FLASHER
OUTPUT ASSIGNMENT #.................34
FREQUENCY (O=DEFAULT) (O-25.5 HZ)...1.0
DUTY CYCLE (O=DEFAULT) (O - 100%)...50
MODE (O=SOLID,1=FLASH)..............1
SELECT ASSIGNMENT:
NOT ENABLED.........................
VEHICLE PHASE.......................
PEDESTRIAN PHASE....................
VEHICLE OVERLAP.....................
PEDESTRIAN OVERLAP..................
WATCHDOG............................
DETECTOR RESET......................
ADVANCE BEACON......................
OUT OF PHASE FLASHER................Y
CONTROLLER FLASH....................
RUN FREE............................
RESERVED............................
PREEMPT.............................
SOFT PREEMPT........................
ANY PREEMPT.........................
COORDINATION PLAN...................
OFFSET..............................
PHASE CHECK.........................
PHASE ON............................
PHASE NEXT..........................
```

OUTPUT #33 = ø2 Ped Yellow
OUTPUT #34 = ø6 Ped Yellow

ADVANCE PROGRAMMING DETAIL

(program controller as shown below)

1. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '2' (OUTPUT BEACON SETTINGS).

```
OUTPUT BEACON SETTINGS

TRIGGER PHASES: |12345678910111213141516
  BEACON #1 OFF |  X
  BEACON #2 OFF |
  BEACON #3 OFF |
  BEACON #4 OFF |
             BEACON |  1   2   3   4
OFF DELAY TIME (0-255)|  0   0   0   0
 ON DELAY TIME (0-255)|  0   0   0   0
STOP-TIME HOLD (0-255)|  2   0   0   0
```

SCROLL DOWN TO VIEW ALL DATA

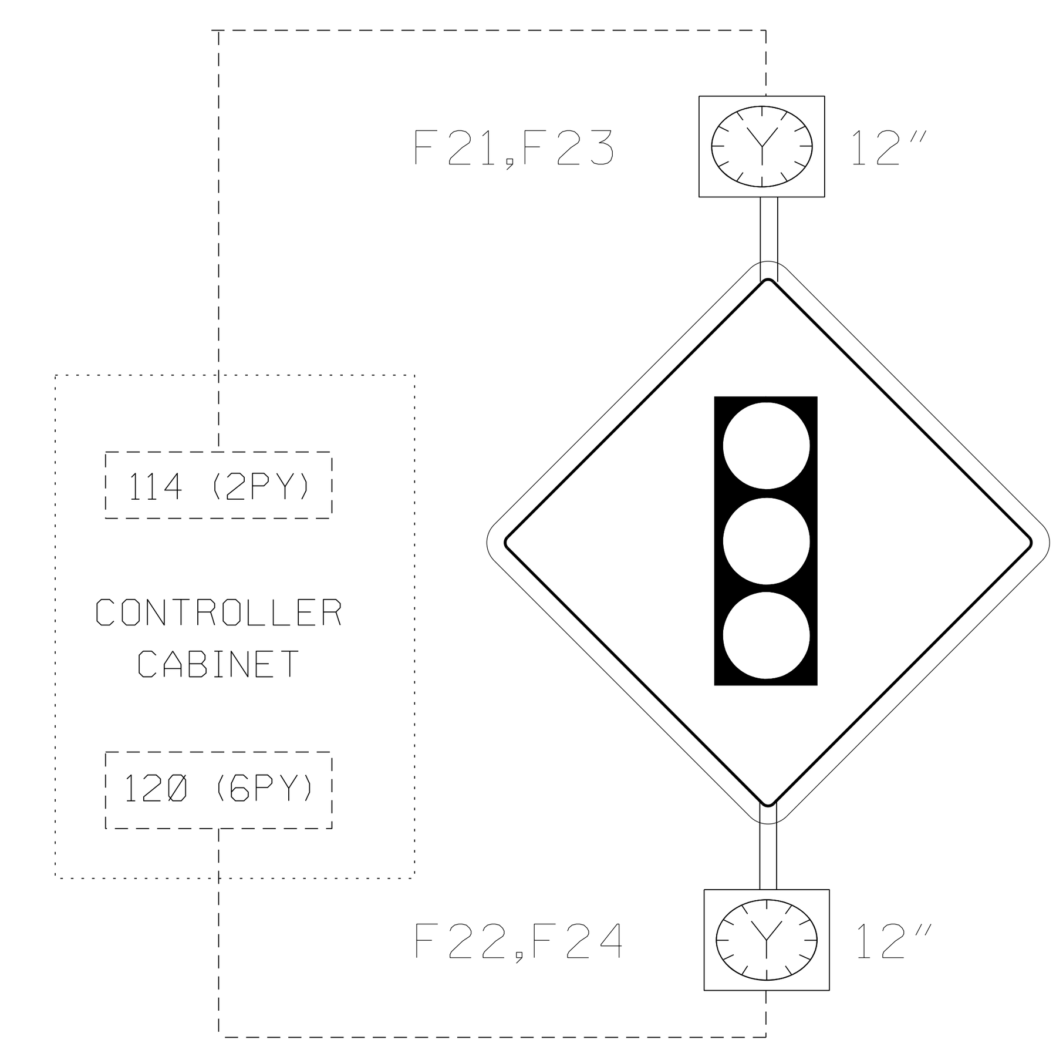
NOTICE STOP TIME HOLD

ADVANCE BEACON PROGRAMMING COMPLETE

NOTE: AN OUTPUT HAS TO BE ASSIGNED AS AN ADVANCE BEACON IN ORDER FOR PROPER OPERATION TO OCCUR. SEE OUTPUT ASSIGNMENT DETIAL ON THIS SHEET.

ADVANCE BEACON WIRING DETAIL

(wire flashers as shown below)



IMPORTANT

1. REMOVE TAPE AND LABEL CONFLICT MONITOR WIRE ATTACHED TO THE REAR OF TERMINAL 114 (2PY) AND TERMINAL 120 (6PY).
2. INSERT LOADSWITCH FOR S3 AND S9.
3. MAKE SURE LOAD RESISTORS ARE IN PLACE AS SHOWN ON LOAD RESISTOR INSTALLATION DETAIL ON SHEET 1 OF 5.
4. TO PRODUCE FLASHING OPERATION AS INDICATED ON THE SIGNAL PLANS, RE-ASSIGN OUTPUTS 33 AND 34 AS SHOWN ON THIS SHEET.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0585
DESIGNED: OCTOBER 2021
SEALED: 10/4/2021
REVISED: N/A

Final Design
Electrical Detail - Sheet 5 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

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Fax. (919) 851-7024
www.stantec.com
License No. F-0672

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:

Transportation Mobility and Safety Division — ITS & Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

US 17-NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3	Pender County	Near Topsail Beach	
PLAN DATE:	October 2021	REVIEWED BY:	E D Harris
PREPARED BY:	R M Muncey	REVIEWED BY:	L E Overn

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 43239
REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 10/4/2021

SIG. INVENTORY NO. 03-0585

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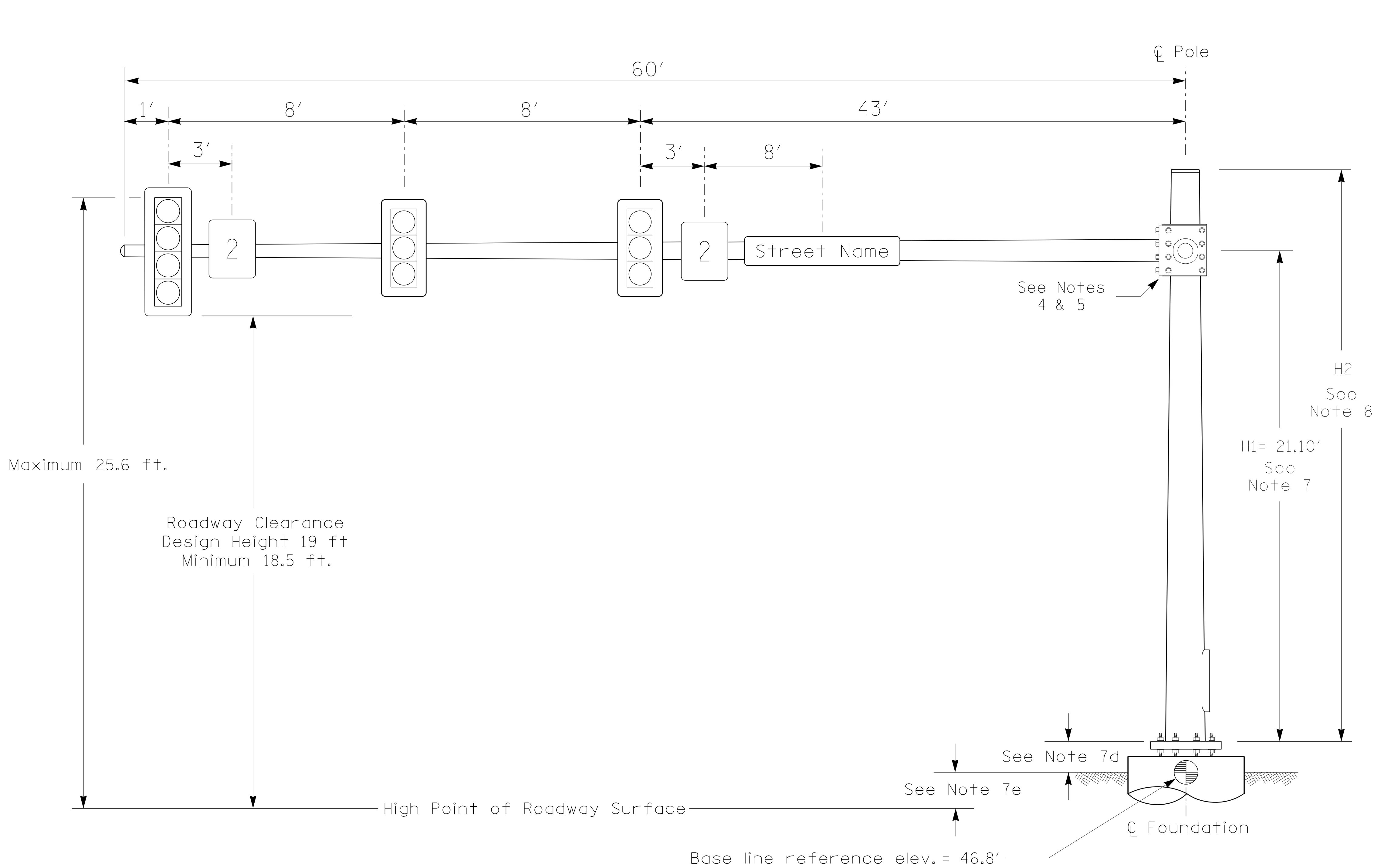
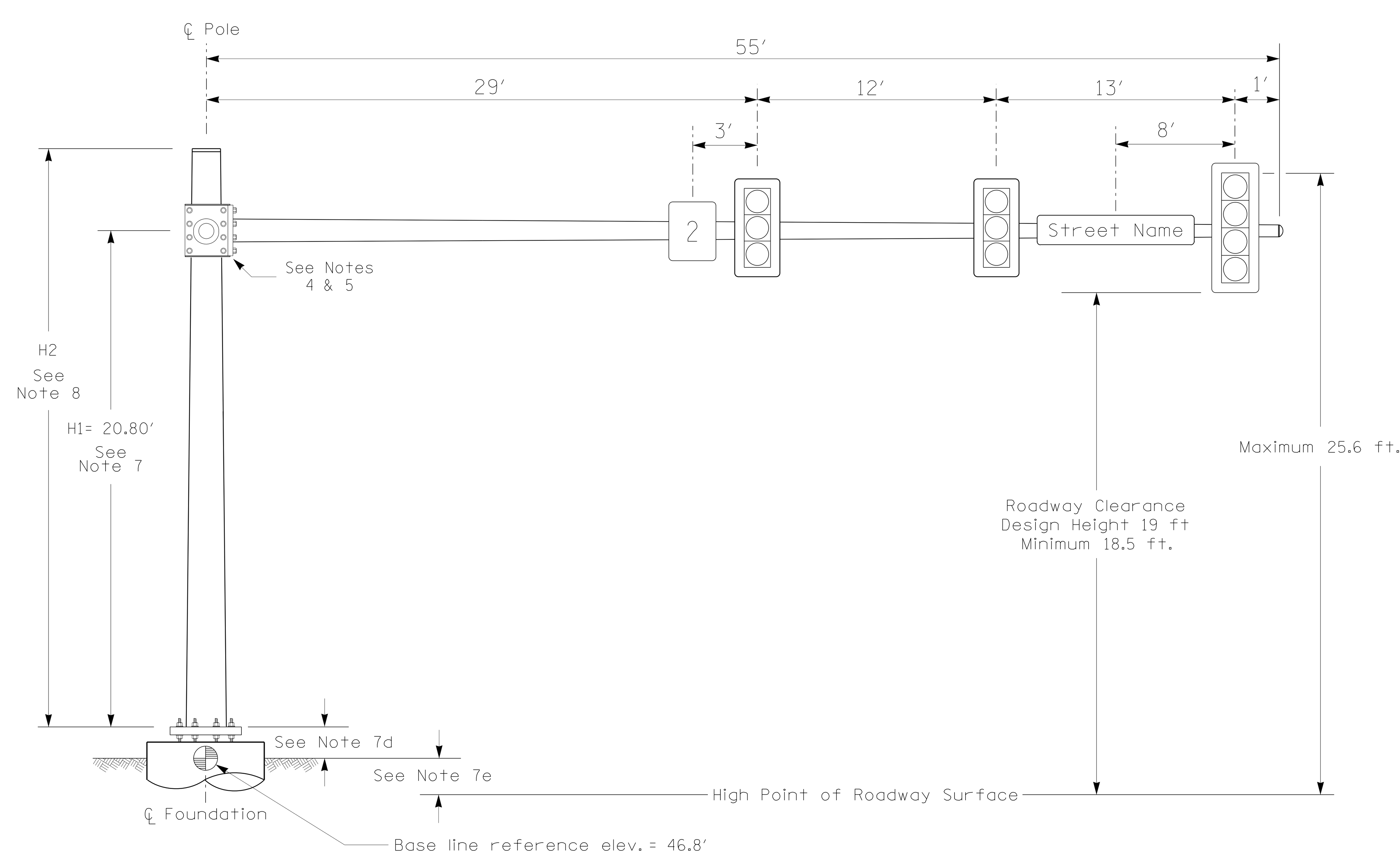
User:jhambright

Design Loading for METAL POLE NO. 1, MAST ARM A



Elevation View @ 270°

Design Loading for METAL POLE NO. 1, MAST ARM B



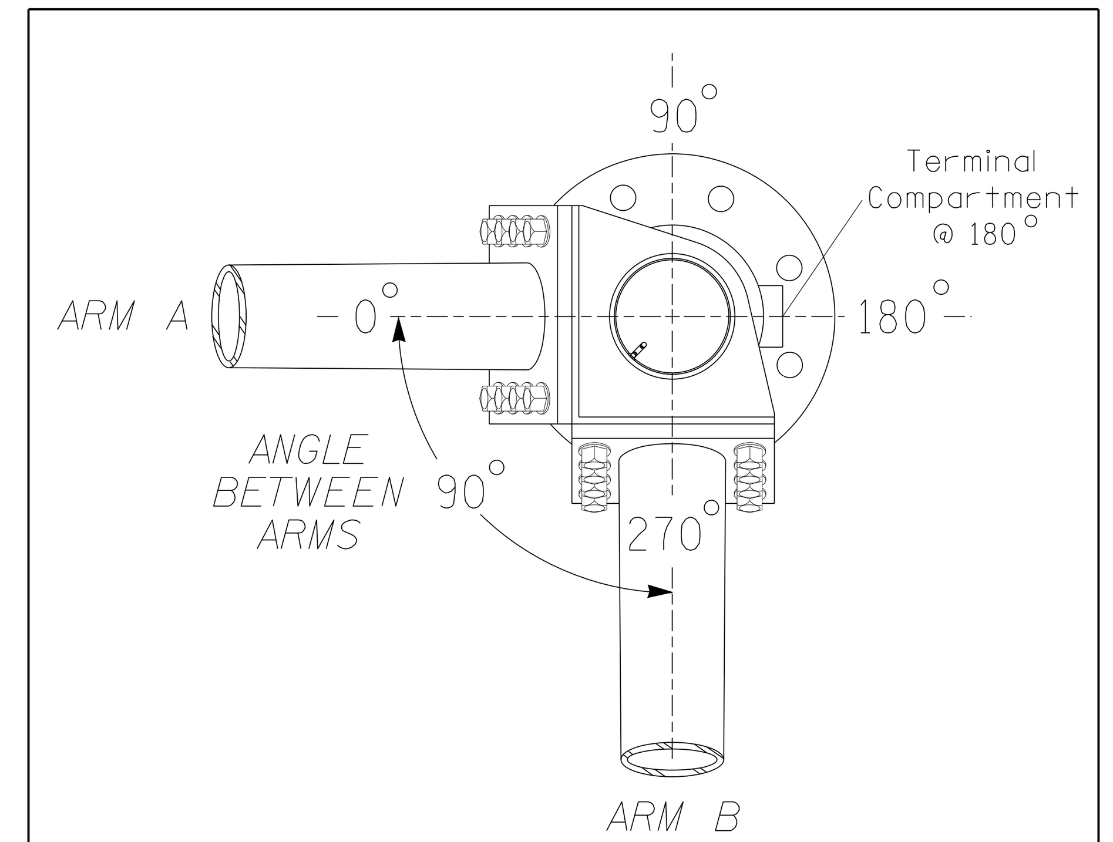
Elevation View @ 0°

SPECIAL NOTE

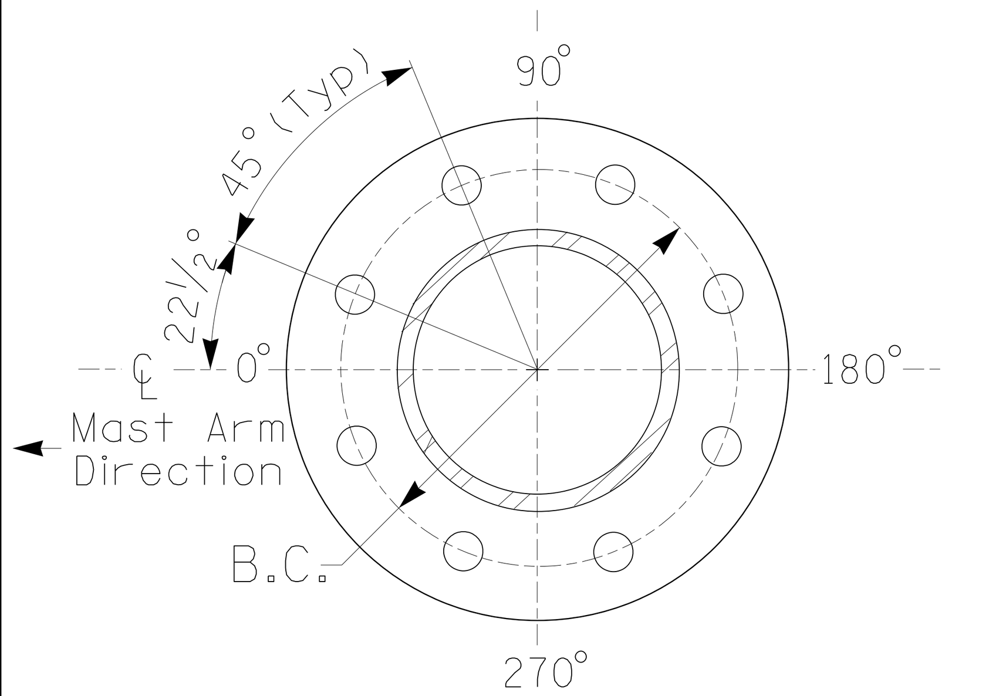
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Arm "A"	Arm "B"
Baseline reference point at ℄ Foundation @ ground level	0.0 ft.	0.0 ft.
Elevation difference at High point of roadway surface	0.00 ft.	-0.29 ft.
Elevation difference at Edge of travelway or face of curb	+/-0.0 ft.	+/-0.0 ft.

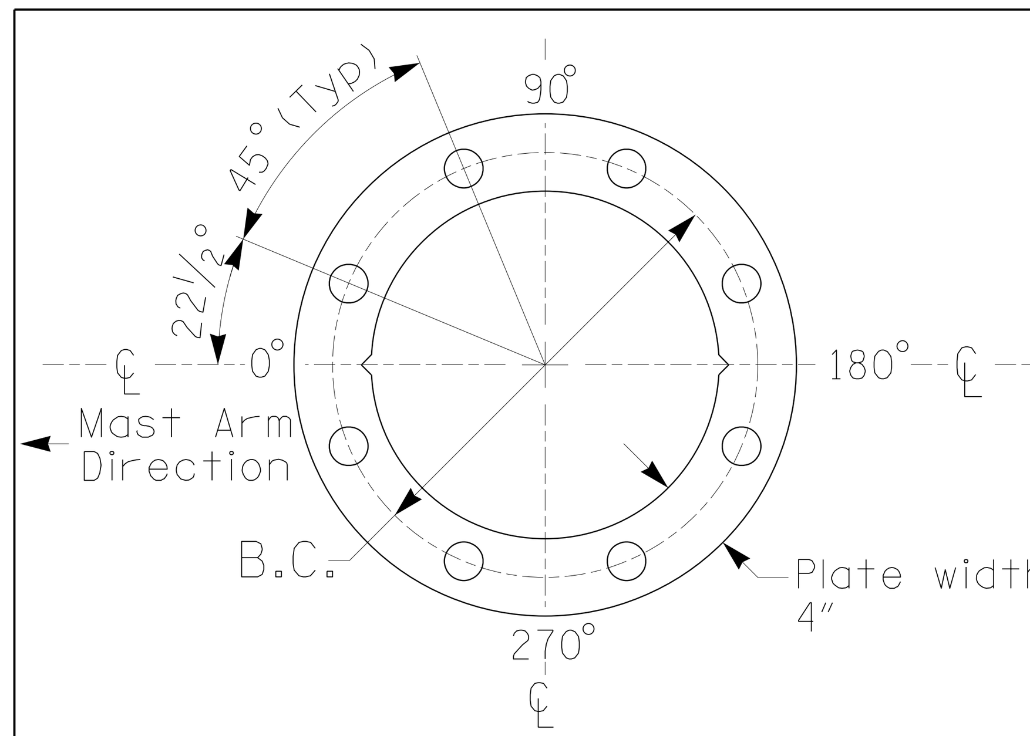


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL
For 8 Bolt Base Plate

METAL POLE No. 1

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	SIG.-15.6

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12″-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5″W X 66.0″L	74 LBS
	RIGID MOUNTED SIGNAL HEAD 12″-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5″W X 52.5″L	60 LBS
2	SIGN RIGID MOUNTED	7.5 S.F.	30.0″W X 36.0″L	14 LBS
Street Name	STREET NAME SIGN RIGID MOUNTED	12.0 S.F.	18.0″W X 96.0″L	27 LBS

NOTES

DESIGN REFERENCE MATERIAL

1. Design the traffic signal structure and foundation in accordance with:
   - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
   - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
   - The 2018 NCDOT Roadway Standard Drawings.
   - The traffic signal project plans and special provisions.
   - The NCDOT "Metal Pole Standards" located at the following NCDOT website: https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

DESIGN REQUIREMENTS

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
3. Design all signal supports using stress ratios that do not exceed 0.9.
4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
7. The mast arm attachment height (H1) shown is based on the following design assumptions:
   a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
   b. Signal heads are rigidly mounted and vertically centered on the mast arm.
   c. The roadway clearance height for design is as shown in the elevation views.
   d. The top of the pole base plate is 0.75 feet above the ground elevation.
   e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
8. The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
   - Mast arm attachment height (H1) plus 2 feet, or
   - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
9. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

NCDOT Wind Zone 2 (130 mph)

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Prepared in the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 N/A
N/A

US 17/NC 210
at
SR 1563 (Sloop Point Loop Rd.)

Division 3 Pender County Near Topsail Beach

PLAN DATE:	October 2021	REVIEWED BY:	D Harris
PREPARED BY:	J Hambright	REVIEWED BY:	R M Muncey

REVISIONS | INIT. | DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 43239 ENGINEER REGINA M. MUNCEY

DocuSigned by: Regina M. Muncey 12/14/2021
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DATE

SIG. INVENTORY NO. 03-0585

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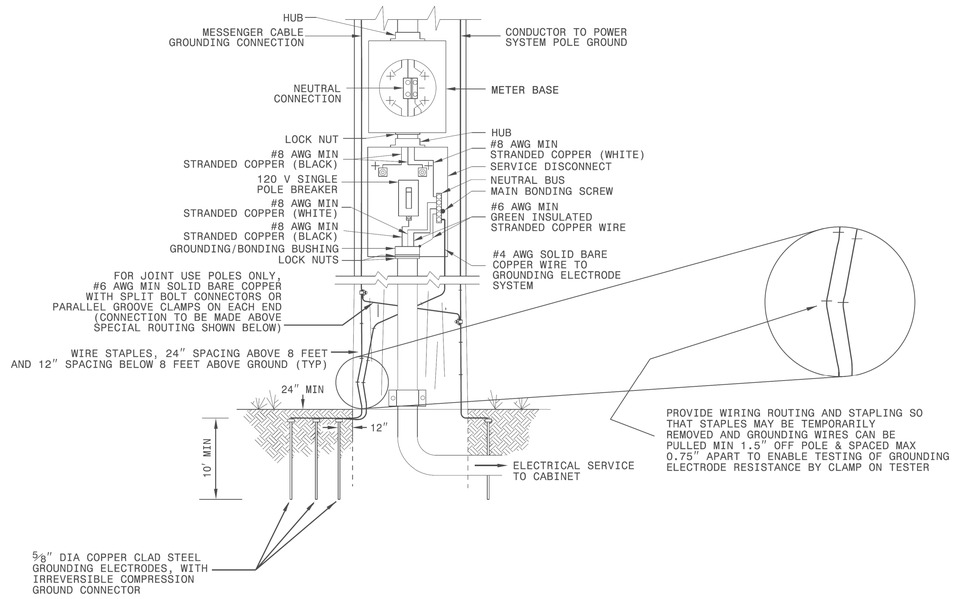
PROJECT NO.	SHEET NO.
R-3300B	Sig.16.0



1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

ELECTRICAL SERVICE GROUNDING

GROUNDING AND BONDING

SHEET 1 OF 1

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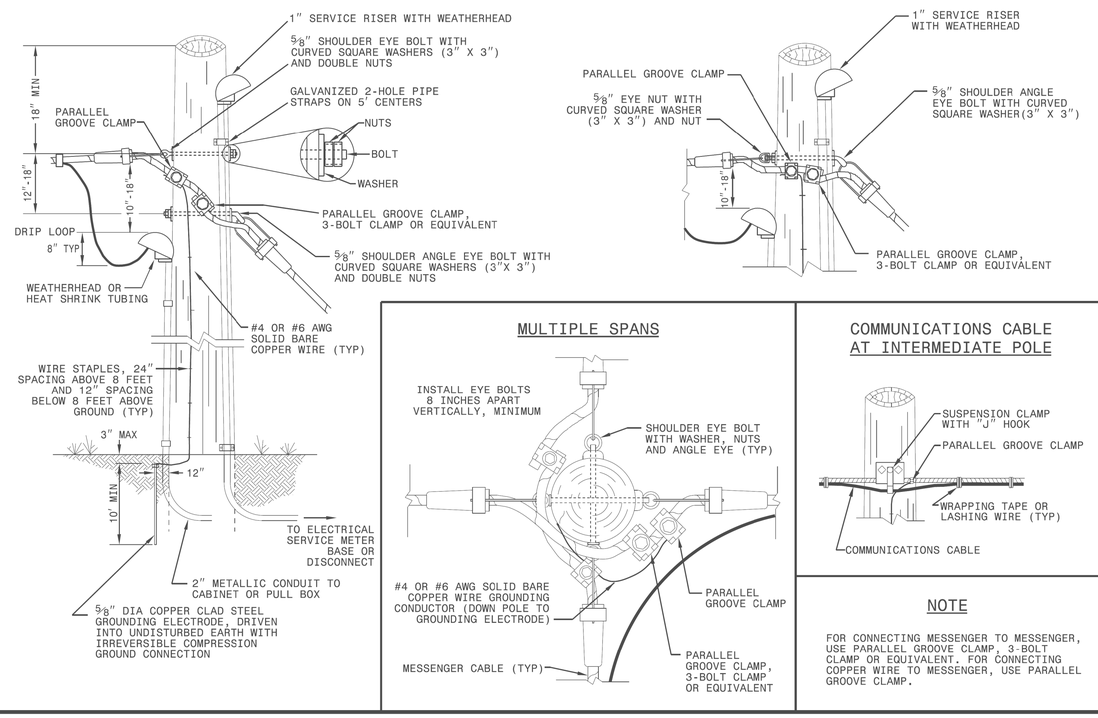

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

WOOD POLES

METHODS OF ATTACHMENT AND GROUNDING

SHEET 1 OF 1

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See Plate for Title

Prepared in the Offices of:

Transportation Mobility and Safety Division
ITS & Signals Unit

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032108 ENGINEER MOHD A. ASLAMI

DocuSigned by: Mohd Aslami 5D980BA6DBB6495...

10/11/2017
DATE