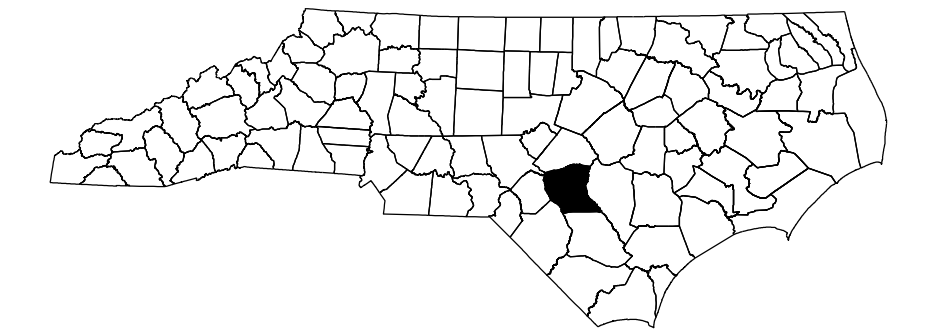


TIP PROJECT: U-6229

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

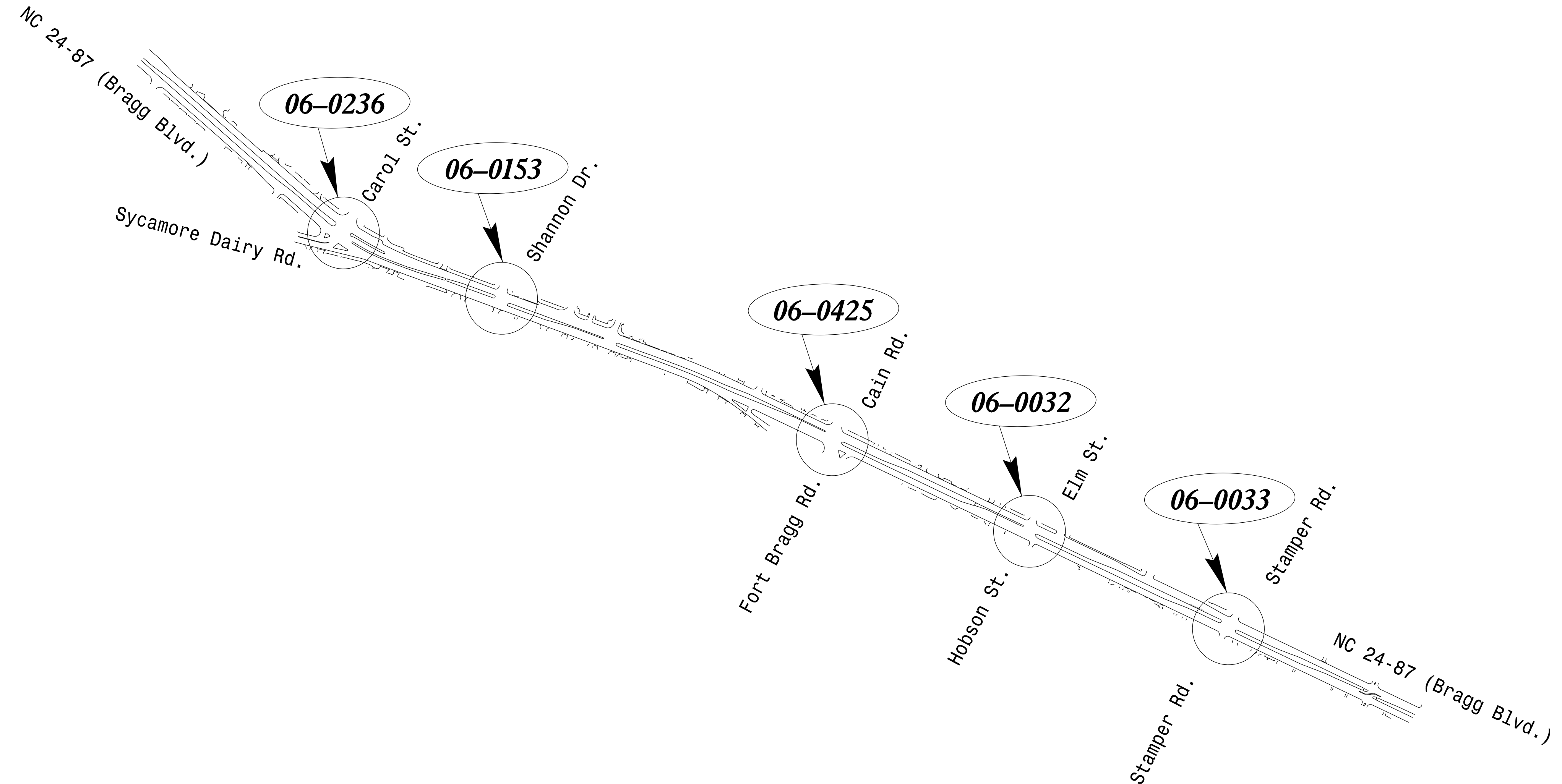
| | |
|-------------|-----------|
| Project No. | Sheet No. |
| U-6229 | Sig. 1.0 |



CUMBERLAND COUNTY

**LOCATION: NC 24-87 (BRAGG BOULEVARD) IMPROVEMENTS
FROM US 401 (SKIBO ROAD) TO STAMPER ROAD**

TYPE OF WORK: TRAFFIC SIGNALS



| INDEX OF PLANS | | |
|----------------|-------------|---|
| Sheet # | Reference # | Location /Description |
| Sig. 1.0 | ----- | Title Sheet |
| Sig. 2.0-2.2 | 06-0236 | NC 24-87 (Bragg Blvd) at Sycamore Dairy Rd/Carol St |
| Sig. 3.0-3.1 | 06-0153 | NC 24-87 (Bragg Blvd) at Shannon Dr |
| Sig. 4.0-4.1 | 06-0425 | NC 24-87 (Bragg Blvd) at Fort Bragg Rd/Cain Rd |
| Sig. 5.0-5.1 | 06-0032 | NC 24-87 (Bragg Blvd) at Elm St |
| Sig. 6.0-6.1 | 06-0033 | NC 24-87 (Bragg Blvd) at Stamper Rd |

LEGEND

##-#### SIGNAL INVENTORY NUMBER

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Zachary Little, PE – Eastern Region Signals Engineer
Todd Joyce, PE – Signal Equipment Design Engineer
Gregory A. Green – Signal Communications Project Engineer

Prepared for the North Carolina Department of Transportation
In the Office of:

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

Refer to Roadway Standard Drawings NCDOT” dated January 2018 and Standard Specifications for Roads and Structures” dated January 2018.

Tim Goins, PE
PROJECT ENGINEER

Jianxin(Justine) Ma, PE PTOE
PROJECT DESIGN ENGINEER

SEAL

DocuSigned by:
Jianxin Ma 1/6/2023
827E1953081444F SIGNATURE DATE

DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY
AND SAFETY DIVISION

TSMO Unit
750 N. Greenfield Parkway, Garner, NC 27529

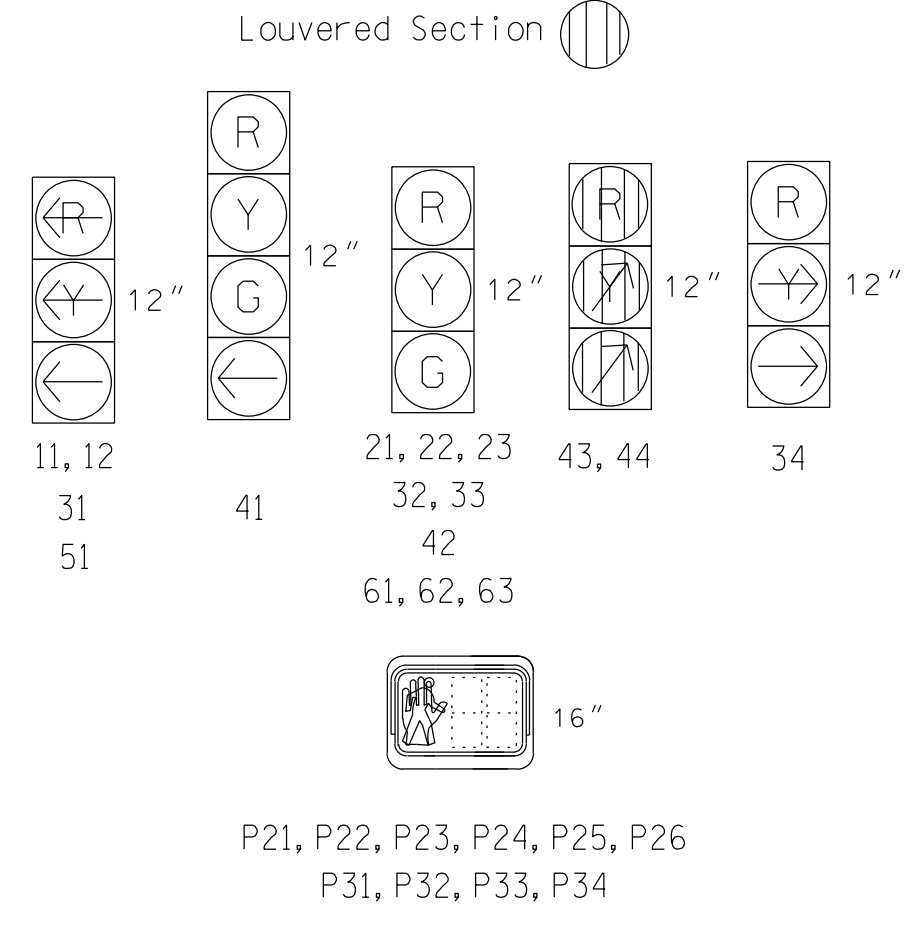
6 Phase Fully Actuated Fayetteville Signal System

NOTES

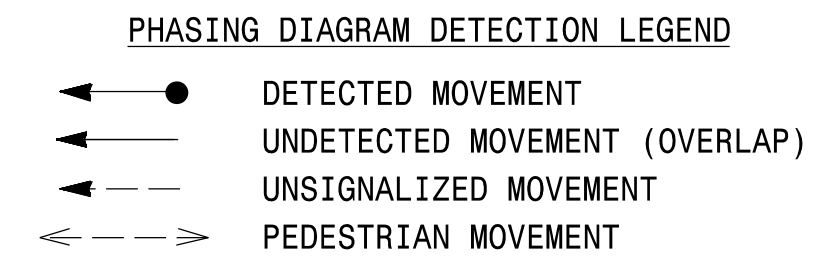
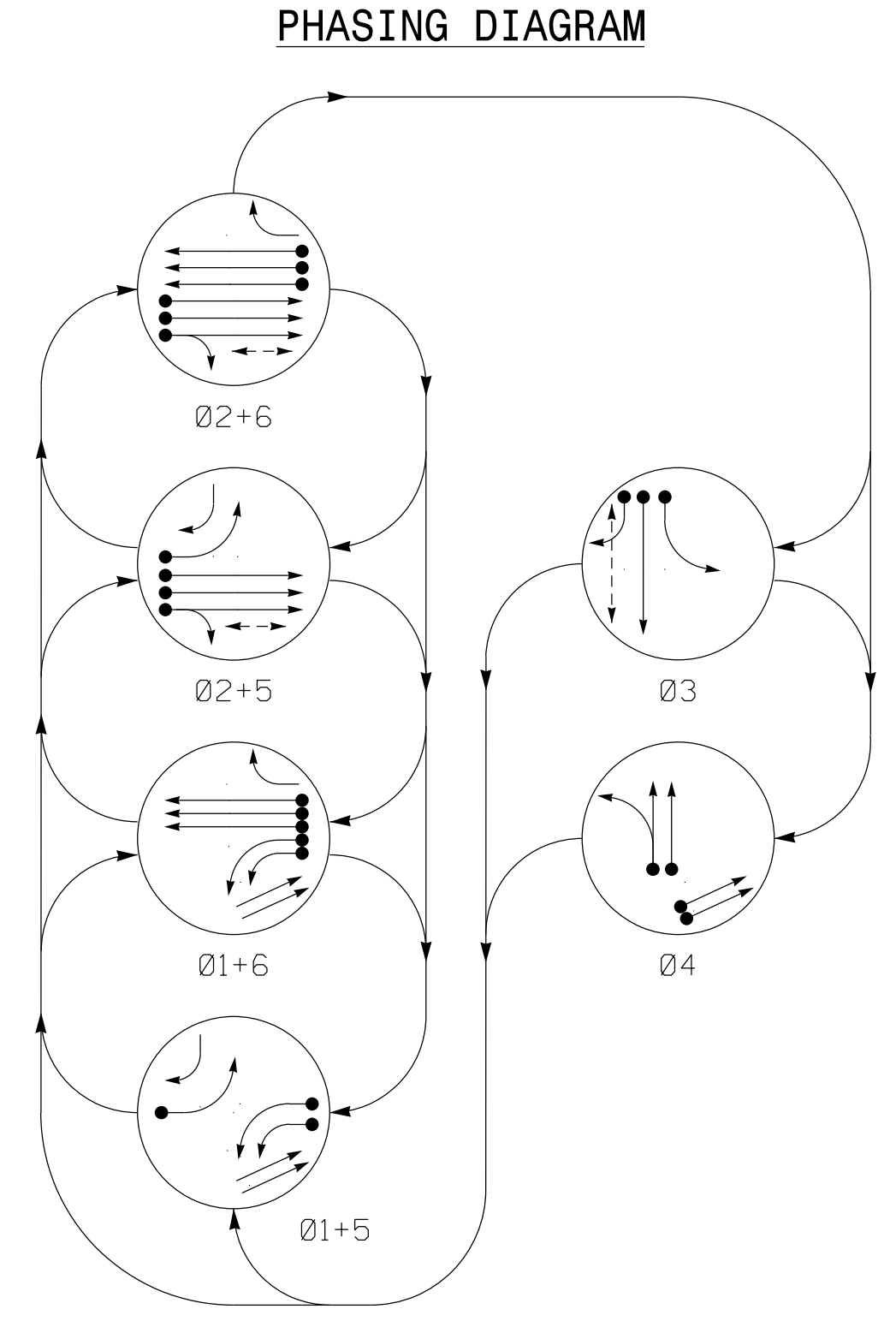
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing 'Don't Walk' time only.
- Reposition existing signal heads 11, 12, 21, and 22.
- Remove existing "YIELD" sign.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

| ASC/3 DETECTOR INSTALLATION CHART | | | | | | | | | | | | |
|-----------------------------------|-----------|----------------------------|-------|-------------|-------|---------|-------------|------------|-------------------|------|-------------|----------|
| DETECTOR | | | | PROGRAMMING | | | | | | | | |
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTEND TIME | DELAY TIME | USE ADDED INITIAL | TYPE | SYSTEM LOOP | NEW CARD |
| 1A | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - | - |
| 1B | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - | - |
| 2A | 6X6 | 300 | 6 | - | 2 | Yes | - | - | X | N | - | - |
| 2B | 6X6 | 300 | 6 | - | 2 | Yes | - | - | X | N | - | - |
| 2C | 6X6 | 300 | 6 | - | 2 | Yes | - | - | X | N | - | - |
| 3A | 6X40 | +5 | 2-4-2 | - | 3 | Yes | - | 3 | - | S | - | - |
| 3B | 6X40 | +5 | 2-4-2 | - | 3 | Yes | - | - | - | S | - | - |
| 3C | 6X40 | +5 | 2-4-2 | - | 3 | Yes | - | 15 | - | S | - | - |
| 4A | 6X40 | 0 | 2-4-2 | - | 4 | Yes | - | - | - | S | - | - |
| 4B | 6X40 | 0 | 2-4-2 | - | 4 | Yes | - | - | - | S | - | - |
| 4C | 6X60 | +10 | 2-4-2 | - | 4 | Yes | - | - | - | S | - | - |
| 4D | 6X60 | +10 | 2-4-2 | - | 4 | Yes | - | - | - | S | - | - |
| 5A | 6X40 | 0 | 2-4-2 | X | 5 | Yes | - | - | - | S | - | - |
| 6A | 6X6 | 300 | 4 | - | 6 | Yes | - | - | X | N | - | - |
| 6B | 6X6 | 300 | 4 | - | 6 | Yes | - | - | X | N | - | - |
| 6C | 6X6 | 300 | 4 | - | 6 | Yes | - | - | X | N | - | - |
| S2A | 6X6 | +588 | 5 | X | - | No | - | - | - | N | X | - |
| S2B | 6X6 | +588 | 5 | X | - | No | - | - | - | N | X | - |
| S2C | 6X6 | +588 | 5 | X | - | No | - | - | - | N | X | - |

SIGNAL FACE I.D.



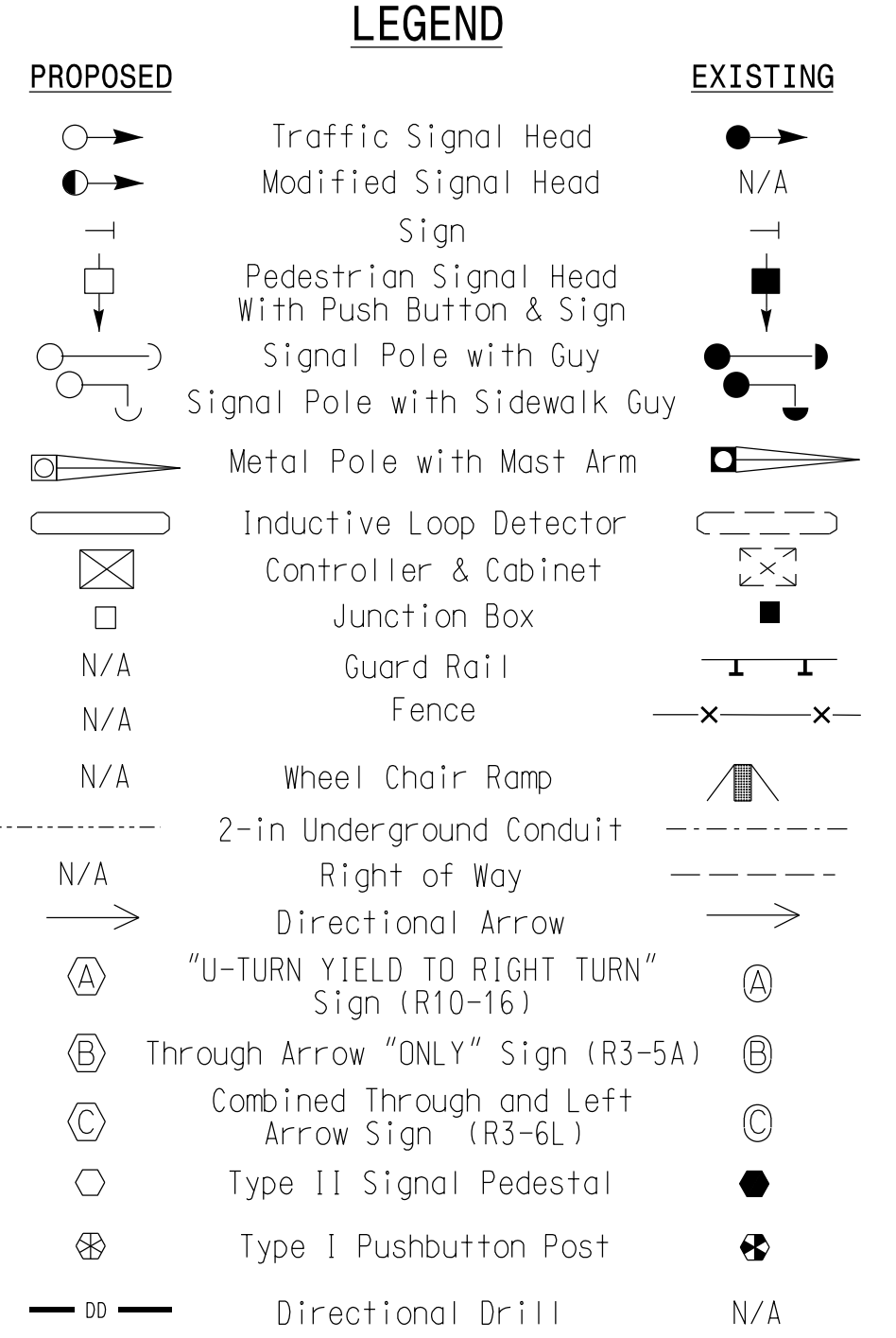
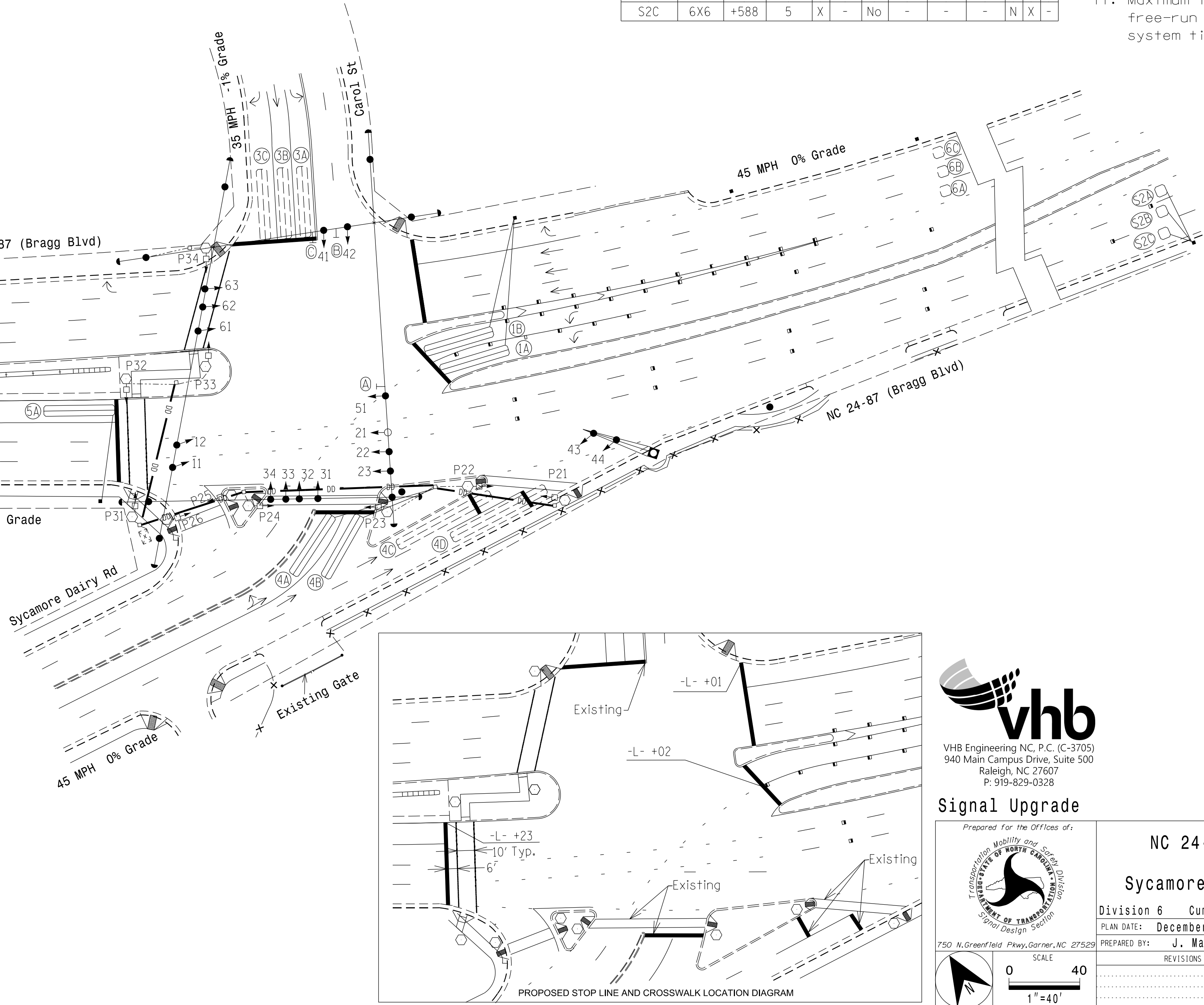
| SIGNAL FACE | PHASE | | | | | |
|--------------------------|---------|---------|---------|---------|-----|-----|
| | Ø 1 + 5 | Ø 1 + 6 | Ø 2 + 5 | Ø 2 + 6 | Ø 3 | Ø 4 |
| 11,12 | ← | ← | ← | ← | ← | ← |
| 21,22, 23 | R | R | G | G | R | R |
| 31 | ← | ← | ← | ← | ← | ← |
| 32,33 | ← | ← | R | R | G | R |
| 34 | → | → | → | → | → | → |
| 41 | R | R | R | R | R | G |
| 42 | R | R | R | R | R | G |
| 43,44 | ← | ← | R | R | R | ← |
| 51 | ← | ← | ← | ← | ← | ← |
| 61,62,63 | R | G | R | G | R | R |
| P21,P22,P23, P24,P25,P26 | DW | DW | W | W | DW | DRK |
| P31,P32,P33,P34 | DW | DW | DW | DW | W | DRK |



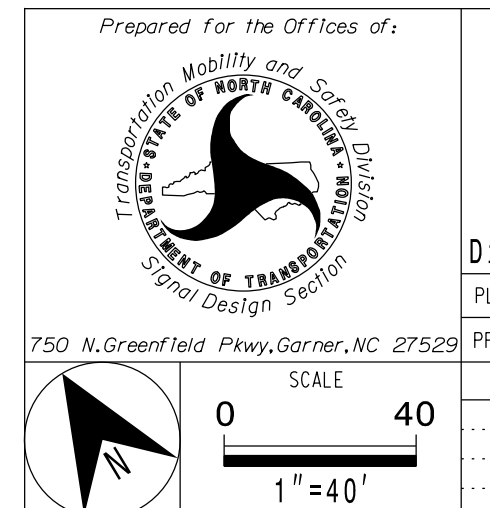
ASC/3 TIMING CHART

| FEATURE | PHASE | | | | | |
|-------------------------|-------|-------------|-----|-----|-----|-------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Min Green * | 7 | 12 | 7 | 7 | 7 | 12 |
| Walk * | 0 | 7 | 7 | 0 | 0 | 0 |
| Ped Clear | 0 | 46 | 39 | 0 | 0 | 0 |
| Veh. Extension * | 2.0 | 6.0 | 2.0 | 2.0 | 2.0 | 6.0 |
| Max I * | 35 | 90 | 20 | 25 | 30 | 90 |
| Yellow | 3.0 | 4.5 | 3.9 | 4.5 | 3.0 | 4.5 |
| Red Clear | 3.5 | 2.9 | 2.9 | 2.4 | 4.5 | 2.9 |
| Actuations B4 Add * | - | 0 | - | - | - | 0 |
| Seconds / Actuation * | - | 1.5 | - | - | - | 1.5 |
| Max Initial * | - | 27 | - | - | - | 34 |
| Time Before Reduction * | - | 15 | - | - | - | 15 |
| Time To Reduce * | - | 30 | - | - | - | 30 |
| Minimum Gap | - | 3.0 | - | - | - | 3.0 |
| Locking Detector | - | X | - | - | - | X |
| Recall Position | - | VEH. RECALL | - | - | - | VEH. RECALL |
| Dual Entry | - | - | - | - | - | - |
| Simultaneous Gap | X | X | X | X | X | X |

* 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.



Signal Upgrade



NC 24-87 (Bragg Blvd) at Sycamore Dairy Rd/Carol St

Division 6 Cumberland County Fayetteville

PLAN DATE: December 2022 REVIEWED BY: M. L. Styles

PREPARED BY: J. Ma REVIEWED BY:

REVISIONS: INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 033108

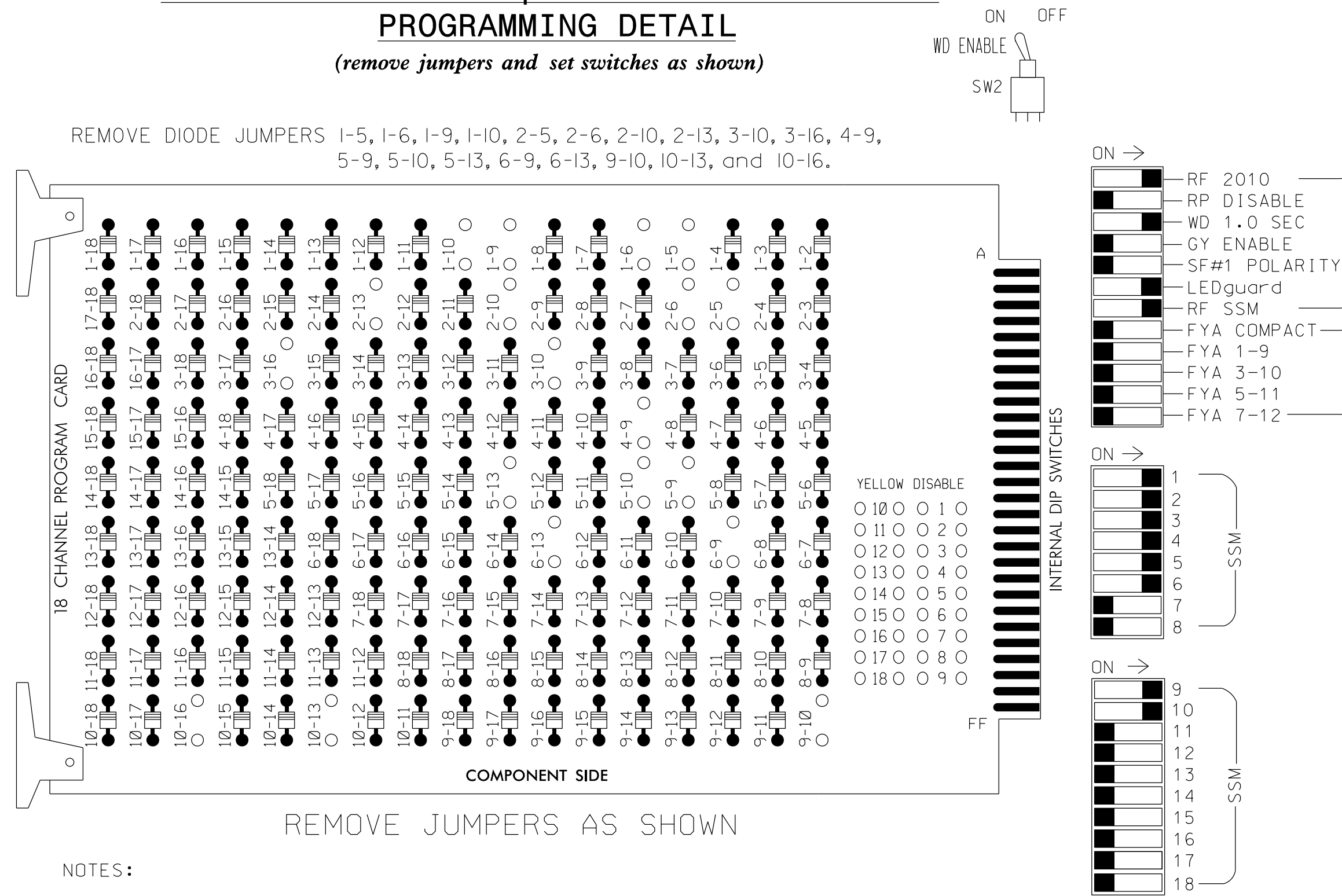
JANXIN MA

1/6/2023

SIG. INVENTORY NO. 06-0236

EDI MODEL 2018ECLip-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-10, 2-5, 2-6, 2-10, 2-13, 3-10, 3-16, 4-9, 5-9, 5-10, 5-13, 6-9, 6-13, 9-10, 10-13, and 10-16.

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. Integrate monitor with Ethernet network in cabinet.

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. Program controller to start up in phase 2 Walk and 6 Green.
3. The cabinet and controller are part of the Fayetteville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S7,S8,S12
 AUX S1,AUX S2
 PHASES USED.....1,2,2PED,3,3PED,4,5,6
 OVERLAP A.....1+4
 OVERLAP B.....3+5
 OVERLAP C.....NOT USED
 OVERLAP D.....NOT USED

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 | 3 | 4 | 4 PED | 5 | 6 | 6 PED | 7 | 8 | 3 PED | OLA | OLB | SPARE | OLC | OLD | SPARE |
| SIGNAL HEAD NO. | 11,12 | 21,22,23 | P21,P22,P23,P24,P25,P26 | 31 | 32,33 | 41 | 42 | NU | 51 | 61,62,63 | NU | NU | P31,P32,P33,P34 | 43,44 | 34 | NU | NU | NU |
| RED | | 128 | | 116 | 101 | 101 | | | | 134 | | | A121 | A124 | | | | |
| YELLOW | | 129 | | 117 | 102 | 102 | | | | 135 | | | | | | | | |
| GREEN | | 130 | | 118 | 103 | 103 | | | | 136 | | | | | | | | |
| RED ARROW | 125 | | | 116 | | | | | | 131 | | | | | | | | |
| YELLOW ARROW | 126 | | | 117 | | | | | | 132 | | | A122 | A125 | | | | |
| GREEN ARROW | 127 | | | 118 | | 103 | | | | 133 | | | A123 | A126 | | | | |
| Hand icon | | | | 113 | | | | | | | | | 110 | | | | | |
| Walking person icon | | | | 115 | | | | | | | | | 112 | | | | | |

NU = Not Used

NOTE: For signal head 34 to flash concurrently with 31, 32 and 33, locate the wire that connects terminal 01-5 on the rear of the output file to terminal TA-1 on the rear of the auxiliary output file. Remove this wire from terminal 01-5 and terminate it on terminal 01-7.

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select **2. CONTROLLER**
2. From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

OVERLAP A

Select TMG VEH OVLP [A] and 'NORMAL'
 TMG VEH OVLP...[A] TYPE:[NORMAL]
 PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 INCLUDED X . . X
 LAG GRN 0.0 YEL 0.0 RED 0.0

Toggle Once

OVERLAP B

Select TMG VEH OVLP [B] and 'NORMAL'
 TMG VEH OVLP...[B] TYPE:[NORMAL]
 PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 INCLUDED . . X . X
 LAG GRN 0.0 YEL 0.0 RED 0.0

END PROGRAMMING

INPUT FILE POSITION LAYOUT

(front view)

| FILE "I" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|----------|----------|-----|----------|----------|-----|-----|----------|---------------|---|----|----|-------------|-------------|-------------|
| U | ∅ 1 | ∅ 2 | ∅ 2 | ∅ 3 | ∅ 3 | ∅ 4 | ∅ 4 | SYS. DET. S2A | | | | ∅ 2PED | NOT USED | FS |
| L | 1A | 2A | 2C | 3B | 3C | 4B | 4D | | | | | DC ISOLATOR | DC ISOLATOR | DC ISOLATOR |
| U | ∅ 1 | ∅ 2 | ∅ 3 | NOT USED | ∅ 4 | ∅ 4 | NOT USED | SYS. DET. S2B | | | | ∅ 3PED | ST | |
| L | 1B | 2B | 3A | | 4A | 4C | | | | | | DC ISOLATOR | DC ISOLATOR | |
| U | ∅ 5 | ∅ 6 | ∅ 6 | ∅ 7 | ∅ 7 | ∅ 8 | ∅ 8 | SYS. DET. S2C | | | | | | |
| L | 5A | 6A | 6C | | | | | | | | | | | |
| U | NOT USED | ∅ 6 | NOT USED | | | | | NOT USED | | | | | | |
| L | | 6B | | | | | | | | | | | | |

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

FS = FLASH SENSE
 ST = STOP TIME

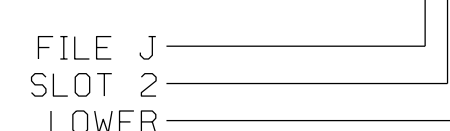
INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE | CALL | EXTEND TIME | DELAY TIME | ADDED INITIAL | DETECTOR TYPE |
|-------------------------|---------------|-----------------|---------|--------------|------------|------|-------------|------------|---------------|---------------|
| 1A | TB2-1,2 | I1U | 56 | 1 | 1 | YES | | | | S |
| 1B | TB2-3,4 | I1L | 56 | 1 | 1 | YES | | | | S |
| 2A | TB2-5,6 | I2U | 39 | 2 | 2 | YES | | | X | N |
| 2B | TB2-7,8 | I2L | 43 | 12 | 2 | YES | | | X | N |
| 2C | TB2-9,10 | I3U | 63 | 32 | 2 | YES | | | X | N |
| 3A | TB2-11,12 | I3L | 76 | 42 | 3 | YES | | 3 | | S |
| 3B | TB4-5,6 | I5U | 58 | 3 | 3 | YES | | | | S |
| 3C | TB4-9,10 | I6U | 41 | 4 | 3 | YES | | 15 | | S |
| 4A | TB4-11,12 | I6L | 45 | 14 | 4 | YES | | | | S |
| 4B | TB6-1,2 | I7U | 65 | 34 | 4 | YES | | | | S |
| 4C | TB6-3,4 | I7L | 78 | 44 | 4 | YES | | | | S |
| 4D | TB6-5,6 | I8U | 49 | 24 | 4 | YES | | | | S |
| 5A | TB3-1,2 | J1U | 55 | 5 | 5 | YES | | | | S |
| 6A | TB3-5,6 | J2U | 40 | 6 | 6 | YES | | | X | N |
| 6B | TB3-7,8 | J2L | 44 | 16 | 6 | YES | | | X | N |
| 6C | TB3-9,10 | J3U | 64 | 36 | 6 | YES | | | X | N |
| *S2A | TB6-9,10 | I9U | 60 | 11 | SYS | NO | | | | N |
| *S2B | TB6-11,12 | I9L | 62 | 13 | SYS | NO | | | | N |
| *S2C | TB7-9,10 | J9U | 59 | 15 | SYS | NO | | | | N |
| PED PUSH BUTTONS | | | | | | | | | | |
| P21,P22,P23,P24,P25,P26 | TB8-4,6 | I12U | 67 | PED 2 | 2 PED | | | | | |
| P31,P32,P33,P34 | TB8-8,9 | I13L | 70 | PED 8 | 3 PED | | | | | |

NOTE: INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

* System detector only. Remove any assigned vehicle phase.

INPUT FILE POSITION LEGEND: J2L



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0236
 DESIGNED: December 2022
 SEALED: 1/6/2023
 REVISED: N/A

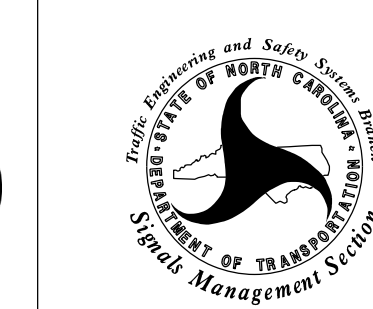


Electrical Detail-Sheet 1 of 2

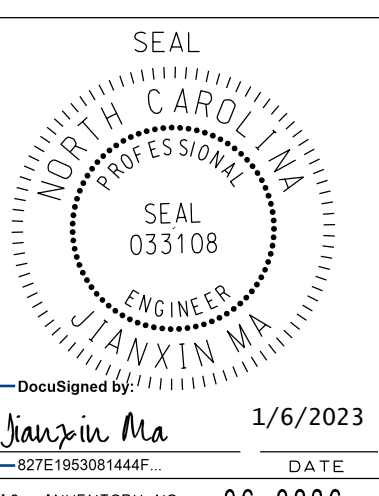
ELECTRICAL AND PROGRAMMING DETAILS FOR:

NC 24-87 (Bragg Blvd) at Sycamore Dairy Rd/Carol St

Division 6 Cumberland County Fayetteville
 PLAN DATE: December 2022 REVIEWED BY: M. L. Stygles
 PREPARED BY: J. Ma REVIEWED BY:



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



750 Greenfield Parkway, Garner, NC 27529

SIG. INVENTORY NO. 06-0236

ECONOLITE ASC/3-2070 PED 3 PROGRAMMING ASSIGNMENT DETAIL

(program controller as shown)

1. From Main Menu select 6. DETECTORS
2. From DETECTOR Submenu select 3. PED DETECTOR INPUT ASSIGNMENT

| PED DET PHASE ASSIGNMENT MODE: NTCIP | | | | | | | | | | | | | | | | |
|--------------------------------------|---|----|----|----|----|----|----|----|--|--|--|--|--|--|--|--|
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | |
| DETECTOR | 0 | 2 | 8 | 4 | 0 | 6 | 0 | 0 | | | | | | | | |
| PHASE | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | | | | | | | |
| DETECTOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |

← NOTICE PED DETECTOR 8
ASSIGNED TO PHASE 3

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 3. LOAD SW ASSIGN

| LD SWITCH ASSIGN | | | | | | | | | | |
|------------------|---------|-------------|---|---|---|-----|-----|-----|---|--|
| PHASE | DIMMING | ---FLASH--- | | | | | | | | |
| /OVLP | TYPE | R | Y | G | D | PWR | AUT | TGR | | |
| 1 | 1 | V | . | . | . | + | A | R | X | |
| 2 | 2 | V | . | . | . | + | A | Y | . | |
| 3 | 3 | V | . | . | . | + | A | R | X | |
| 4 | 4 | V | . | . | . | + | A | R | . | |
| 5 | 5 | V | . | . | . | - | A | R | . | |
| 6 | 6 | V | . | . | . | - | A | Y | X | |
| 7 | 7 | V | . | . | . | - | A | R | . | |
| 8 | 8 | V | . | . | . | - | A | R | X | |
| 9 | 1 | O | . | . | . | + | A | R | X | |
| 10 | 2 | O | . | . | . | + | A | R | X | |
| 11 | 3 | O | . | . | . | - | A | R | . | |
| 12 | 4 | O | . | . | . | - | A | R | . | |
| 13 | 2 | P | . | . | . | + | A | . | . | |
| 14 | 4 | P | . | . | . | - | A | . | . | |
| 15 | 6 | P | . | . | . | + | A | . | . | |
| 16 | 3 | P | . | . | . | - | A | . | . | |

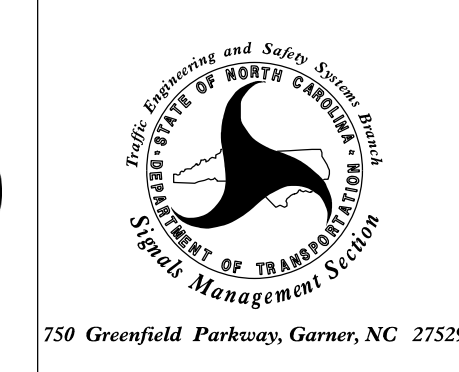
NOTICE PHASE 3 PED
ASSIGNED TO LD SWITCH 16 →

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 06-0236
DESIGNED: December 2022
SEALED: 1/6/2023
REVISED: N/A

Electrical Detail-Sheet 2 of 2



| | |
|--|--------------------------------|
| NC 24-87 (Bragg Blvd) at Sycamore Dairy Rd/Carol St | |
| Division 6 | Cumberland County Fayetteville |
| PLAN DATE: December 2022 | REVIEWED BY: M. L. Stygles |
| PREPARED BY: J. Ma | REVIEWED BY: |
| REVISIONS | INIT. DATE |
| | |
| | |

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
J. MA
033108

DocuSigned by:
Jianxin Ma
1/6/2023

DATE

SIG. INVENTORY NO. 06-0236

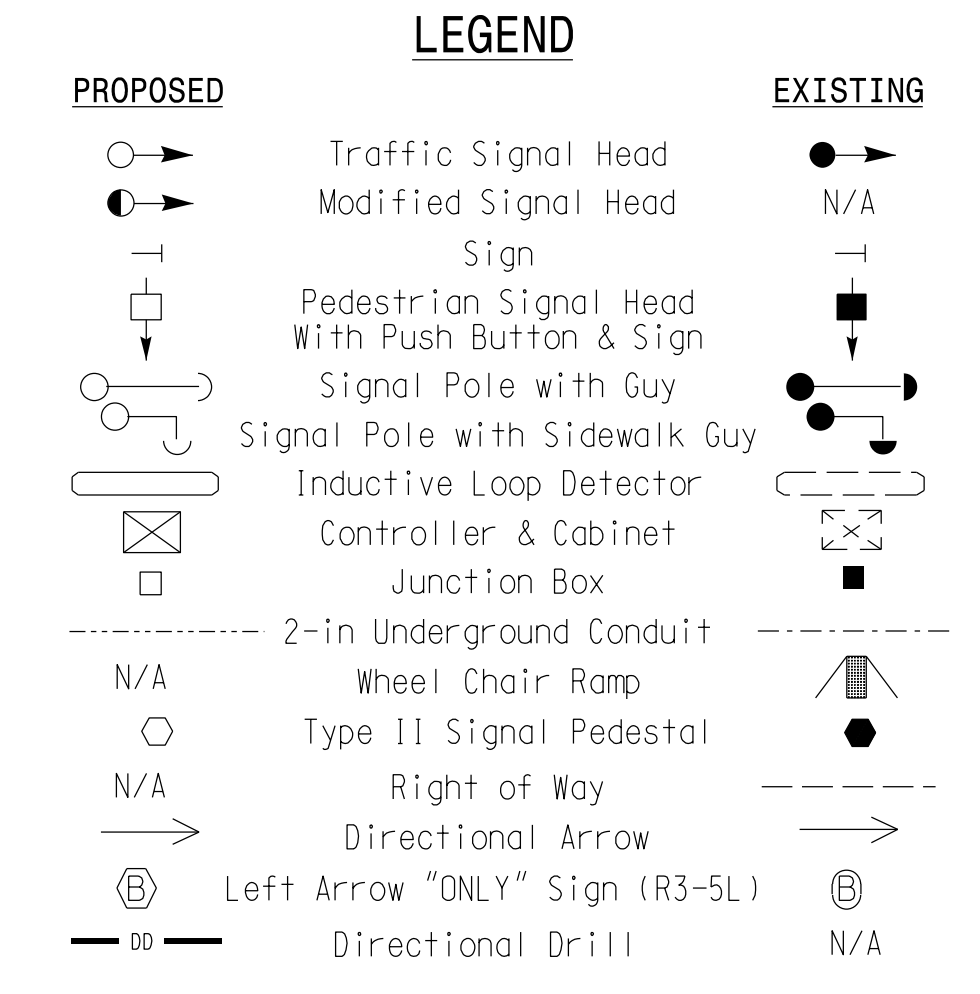
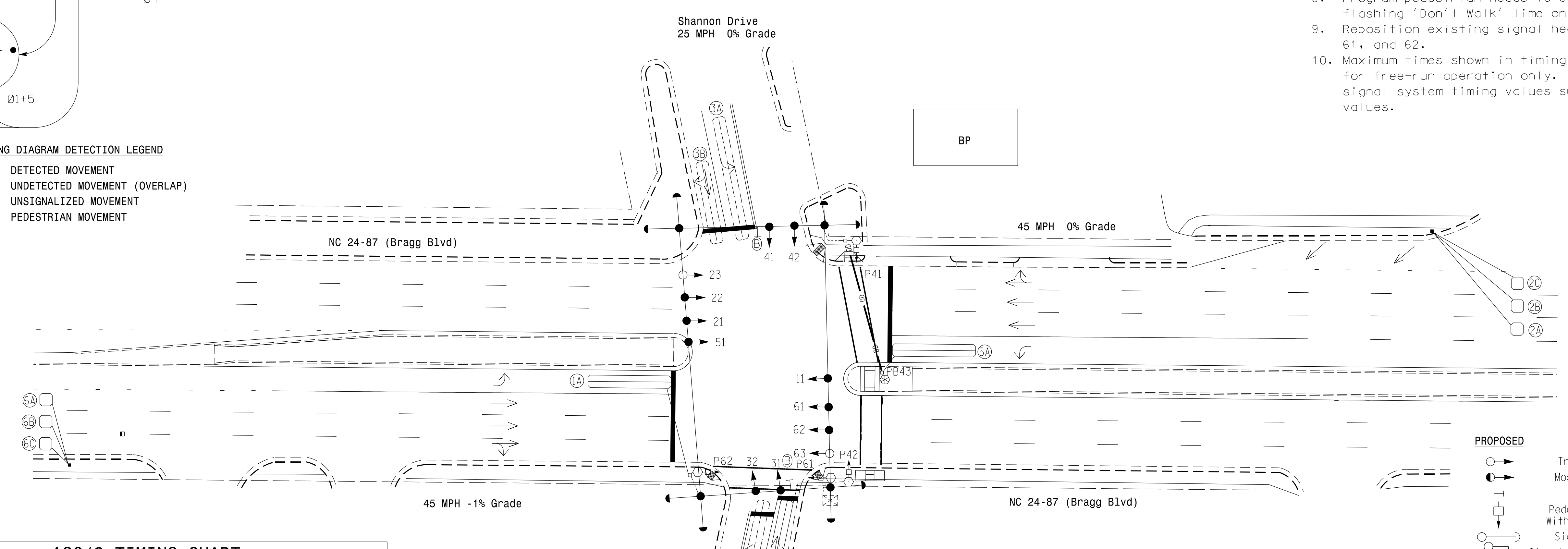
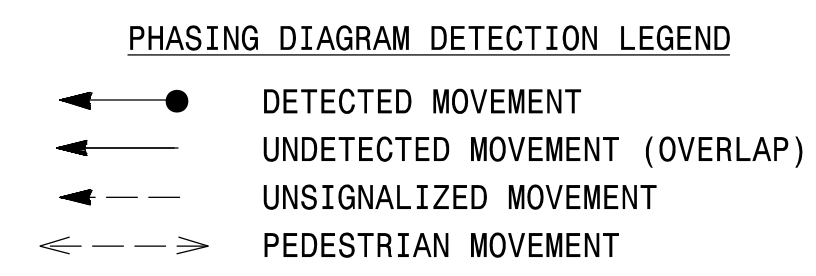
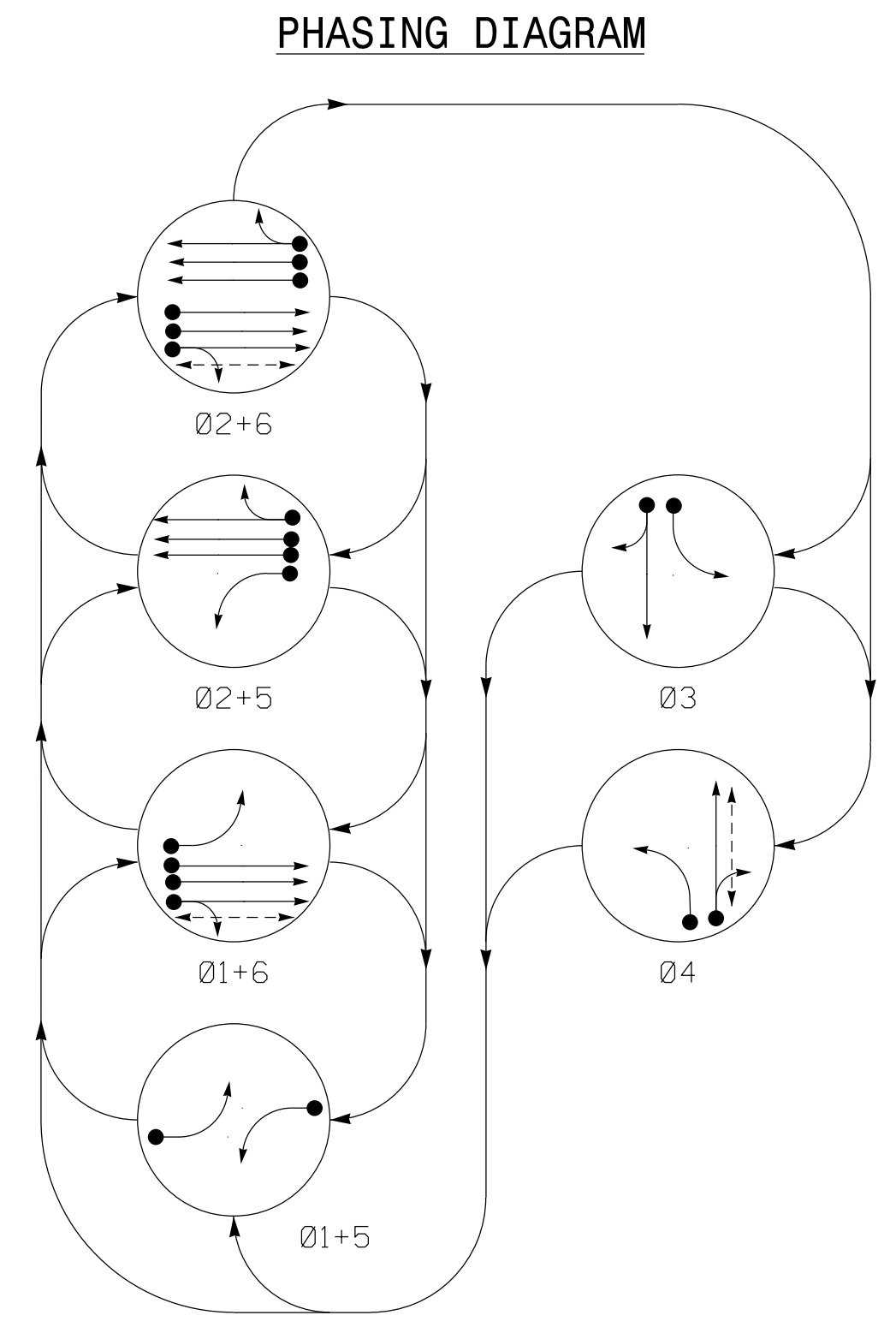
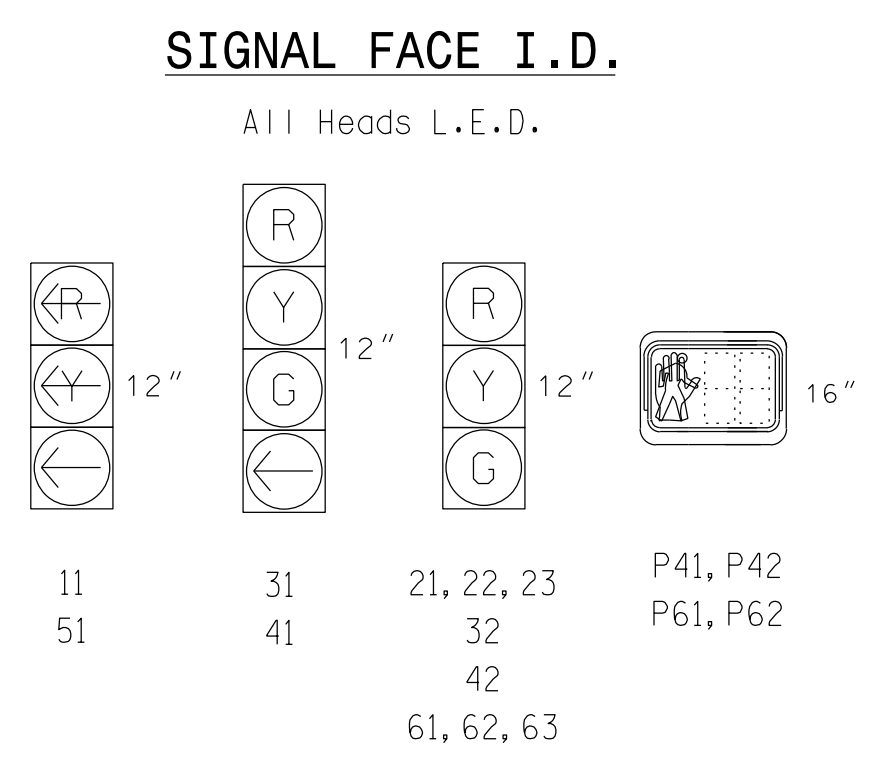
6 Phase Fully Actuated Fayetteville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing 'Don't Walk' time only.
- Reposition existing signal heads 21, 22, 51, 61, and 62.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

| ASC/3 DETECTOR INSTALLATION CHART | | | | | | | | | | | | |
|-----------------------------------|-----------|----------------------------|-------|----------|-------------|---------|-------------|------------|-------------------|------|-------------|----------|
| DETECTOR | | | | | PROGRAMMING | | | | | | | |
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTEND TIME | DELAY TIME | USE ADDED INITIAL | TYPE | SYSTEM LOOP | NEW CARD |
| 1A | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - | - |
| 2A | 6X6 | 300 | 4 | - | 2 | Yes | - | - | X | N | - | - |
| 2B | 6X6 | 300 | 4 | - | 2 | Yes | - | - | X | N | - | - |
| 2C | 6X6 | 300 | 4 | - | 2 | Yes | - | - | X | N | - | - |
| 3A | 6X60 | +5 | 2-4-2 | - | 3 | Yes | - | 3 | - | S | - | - |
| 3B | 6X40 | +5 | 2-4-2 | - | 3 | Yes | - | - | - | S | - | - |
| 4A | 6X40 | +5 | 2-4-2 | - | 4 | Yes | - | 3 | - | S | - | - |
| 4B | 6X40 | 0 | 2-4-2 | X | 4 | Yes | - | 10 | - | S | - | - |
| 5A | 6X40 | 0 | 2-4-2 | X | 5 | Yes | - | - | - | S | - | - |
| 6A | 6X6 | 300 | 4 | - | 6 | Yes | - | - | X | N | - | - |
| 6B | 6X6 | 300 | 4 | - | 6 | Yes | - | - | X | N | - | - |
| 6C | 6X6 | 300 | 4 | - | 6 | Yes | - | - | X | N | - | - |

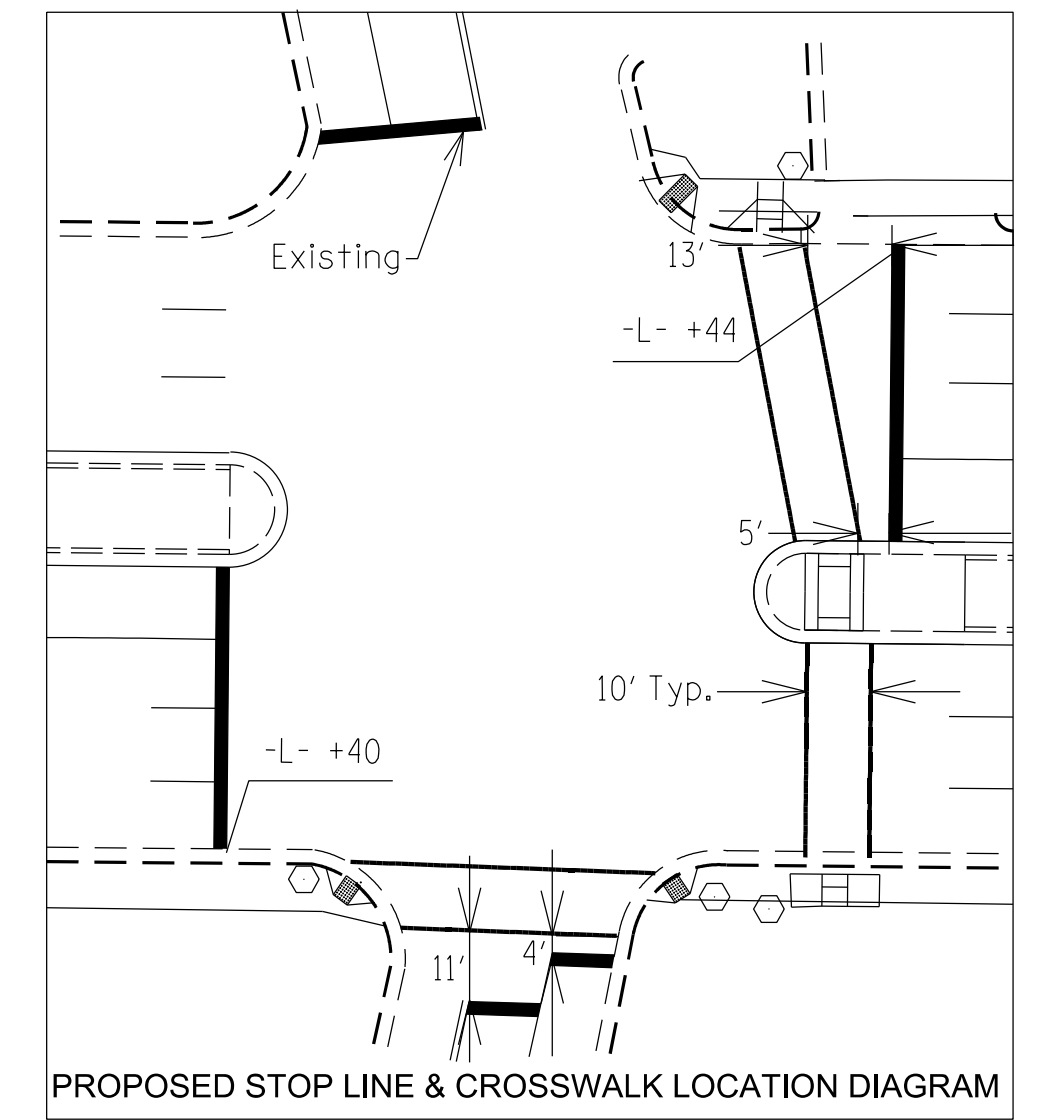
| SIGNAL FACE | PHASE | | | | | |
|-------------|-------|-------|-------|-------|-----|-----|
| | Ø 1+5 | Ø 1+6 | Ø 2+5 | Ø 2+6 | Ø 3 | Ø 4 |
| 11 | ← | ← | ← | ← | ← | ← |
| 21,22,23 | R | R | G | G | R | Y |
| 31 | R | R | R | R | G | R |
| 32 | R | R | R | R | G | R |
| 41 | R | R | R | R | G | R |
| 42 | R | R | R | R | G | R |
| 51 | ← | ← | ← | ← | ← | ← |
| 61,62,63 | R | G | R | G | R | Y |
| P41,P42 | DW | DW | DW | DW | W | DRK |
| P61,P62 | DW | W | DW | W | DW | DRK |



ASC/3 TIMING CHART

| FEATURE | PHASE | | | | | |
|-------------------------|-------|-------------|-----|-----|-----|-------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Min Green * | 7 | 12 | 7 | 7 | 7 | 12 |
| Walk * | 0 | 0 | 0 | 7 | 0 | 7 |
| Ped Clear | 0 | 0 | 0 | 27 | 0 | 7 |
| Veh. Extension * | 2.0 | 6.0 | 2.0 | 2.0 | 2.0 | 6.0 |
| Max I * | 15 | 90 | 15 | 15 | 15 | 90 |
| Yellow | 3.0 | 4.6 | 3.2 | 3.1 | 3.0 | 4.6 |
| Red Clear | 2.8 | 1.5 | 3.1 | 3.2 | 3.3 | 1.5 |
| Actuations B4 Add * | - | - | - | - | - | - |
| Seconds / Actuation * | - | 1.0 | - | - | - | 1.0 |
| Max Initial * | - | 32 | - | - | - | 32 |
| Time Before Reduction * | - | 15 | - | - | - | 15 |
| Time To Reduce * | - | 45 | - | - | - | 45 |
| Minimum Gap | - | 3.0 | - | - | - | 3.0 |
| Locking Detector | - | X | - | - | - | X |
| Recall Position | - | VEH. RECALL | - | - | - | VEH. RECALL |
| Dual Entry | - | - | - | - | - | - |
| Simultaneous Gap | X | X | X | X | X | X |

* 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.



Signal Upgrade

Prepared for the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC 24-87 (Bragg Blvd) at Shannon Dr/Flea Market Entrance

Division 6 Cumberland County Fayetteville

PLAN DATE: December 2022 REVIEWED BY: M. L. Styles

PREPARED BY: J. Ma REVIEWED BY:

REVISIONS: INIT. DATE

SCALE: 0 30 1"=30'

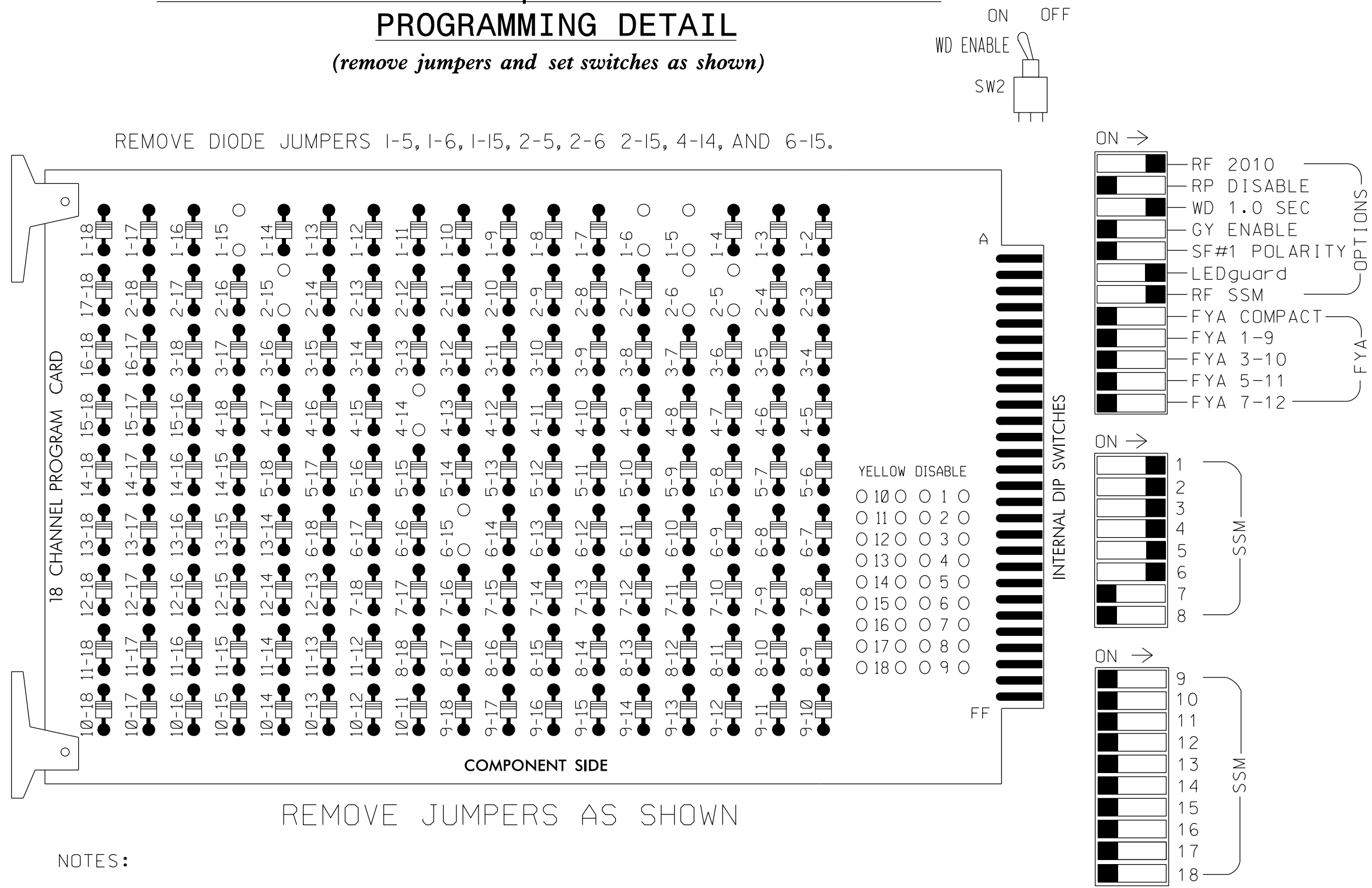
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033108

DATE: 1/6/2023

SIG. INVENTORY NO. 06-0153

EDI MODEL 2018ECLip-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. Integrate monitor with Ethernet network in cabinet.

■ = 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. Program controller to start up in phase 2 Green and 6 Walk.
3. The cabinet and controller are part of the Fayetteville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONDLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S4,S5,S6,S7,S8,S9
 PHASES USED.....1,2,3,4,4PED,5,6,6PED
 OVERLAPS.....NONE

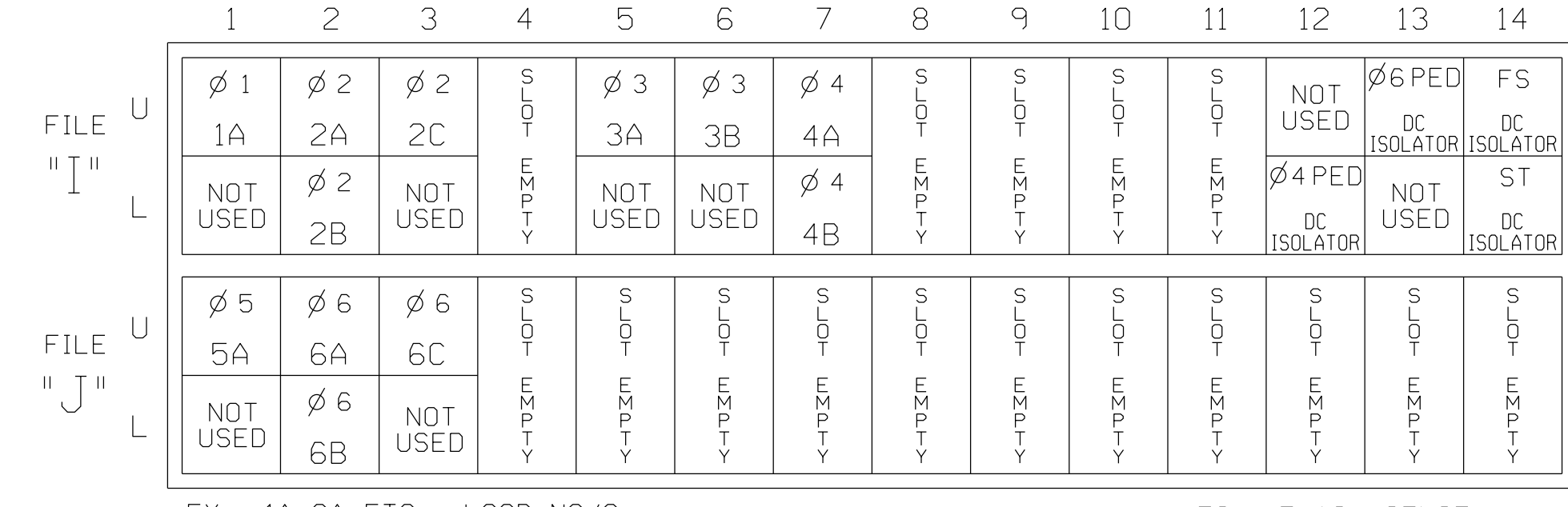
SIGNAL HEAD HOOK-UP CHART

| LOAD SWITCH NO. | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 |
|---------------------|-----|----------|-------|-----|-----|-------|-----|----------|-------|----------|----------|-------|
| CMU CHANNEL NO. | 1 | 2 | 13 | 3 | 4 | 14 | 5 | 6 | 15 | 7 | 8 | 16 |
| PHASE | 1 | 2 | 2 PED | 3 | 4 | 4 PED | 5 | 6 | 6 PED | 7 | 8 | 8 PED |
| SIGNAL HEAD NO. | 11 | 21,22,23 | NU | 31 | 32 | 41 | 42 | P41, P42 | 51 | 61,62,63 | P61, P62 | NU |
| RED | | 128 | | 116 | 116 | 101 | 101 | | | 134 | | |
| YELLOW | | 129 | | 117 | 117 | 102 | 102 | | | 135 | | |
| GREEN | | 130 | | 118 | 118 | 103 | 103 | | | 136 | | |
| RED ARROW | 125 | | | | | | | | 131 | | | |
| YELLOW ARROW | 126 | | | | | | | | 132 | | | |
| GREEN ARROW | 127 | | | 118 | | 103 | | | 133 | | | |
| Hand icon | | | | | | | | 104 | | 119 | | |
| Walking person icon | | | | | | | | 106 | | 121 | | |

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME

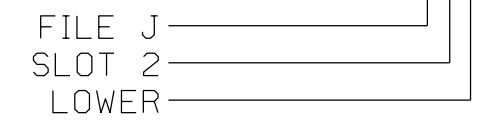
INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE | CALL | EXTEND TIME | DELAY TIME | ADDED INITIAL | DETECTOR TYPE |
|----------|---------------|-----------------|---------|--------------|------------|------|-------------|------------|---------------|---------------|
| 1A | TB2-1,2 | I1U | 56 | 1 | 1 | YES | | | | S |
| 2A | TB2-5,6 | I2U | 39 | 2 | 2 | YES | | | X | N |
| 2B | TB2-7,8 | I2L | 43 | 12 | 2 | YES | | | X | N |
| 2C | TB2-9,10 | I3U | 63 | 32 | 2 | YES | | | X | N |
| 3A | TB4-5,6 | I5U | 58 | 3 | 3 | YES | | 3 | | S |
| 3B | TB4-9,10 | I6U | 41 | 4 | 3 | YES | | 3 | | S |
| 4A | TB6-1,2 | I7U | 65 | 34 | 4 | YES | | 3 | | S |
| 4B | TB6-3,4 | I7L | 78 | 44 | 4 | YES | | 10 | | S |
| 5A | TB3-1,2 | J1U | 55 | 5 | 5 | YES | | | | S |
| 6A | TB3-5,6 | J2U | 40 | 6 | 6 | YES | | | X | N |
| 6B | TB3-7,8 | J2L | 44 | 16 | 6 | YES | | | X | N |
| 6C | TB3-9,10 | J3U | 64 | 36 | 6 | YES | | | X | N |

| PED PUSH BUTTONS | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE |
|------------------|---------------|-----------------|---------|--------------|------------|
| P41,P42, P643 | TB8-5,6 | I12L | 69 | PED 4 | 4 PED |
| P61,P62 | TB8-7,9 | I13U | 68 | PED 6 | 6 PED |

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

INPUT FILE POSITION LEGEND: J2L



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0153
 DESIGNED: December 2022
 SEALED: 1/6/2023
 REVISED: N/A

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Prepared For: **Seal of the State of North Carolina**

Division 6 Cumberland County Fayetteville

PLAN DATE: December 2022 REVIEWED BY: M. L. Stygles

PREPARED BY: J. Ma REVIEWED BY:

REVISIONS: INIT. DATE

DocuSigned by: **Jianxin Ma** 1/6/2023

SIG. INVENTORY NO. 06-0153

NC 24-87 (Bragg Blvd) at Shannon Dr/Flea Market Entrance

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033108

DocuSigned by: **Jianxin Ma** 1/6/2023

SIG. INVENTORY NO. 06-0153

8 Phase Fully Actuated Fayetteville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing 'Don't Walk' time only.
- Reposition existing signal heads 11, 12, 21, 22, 51, 61, 62 and signs D and E.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM

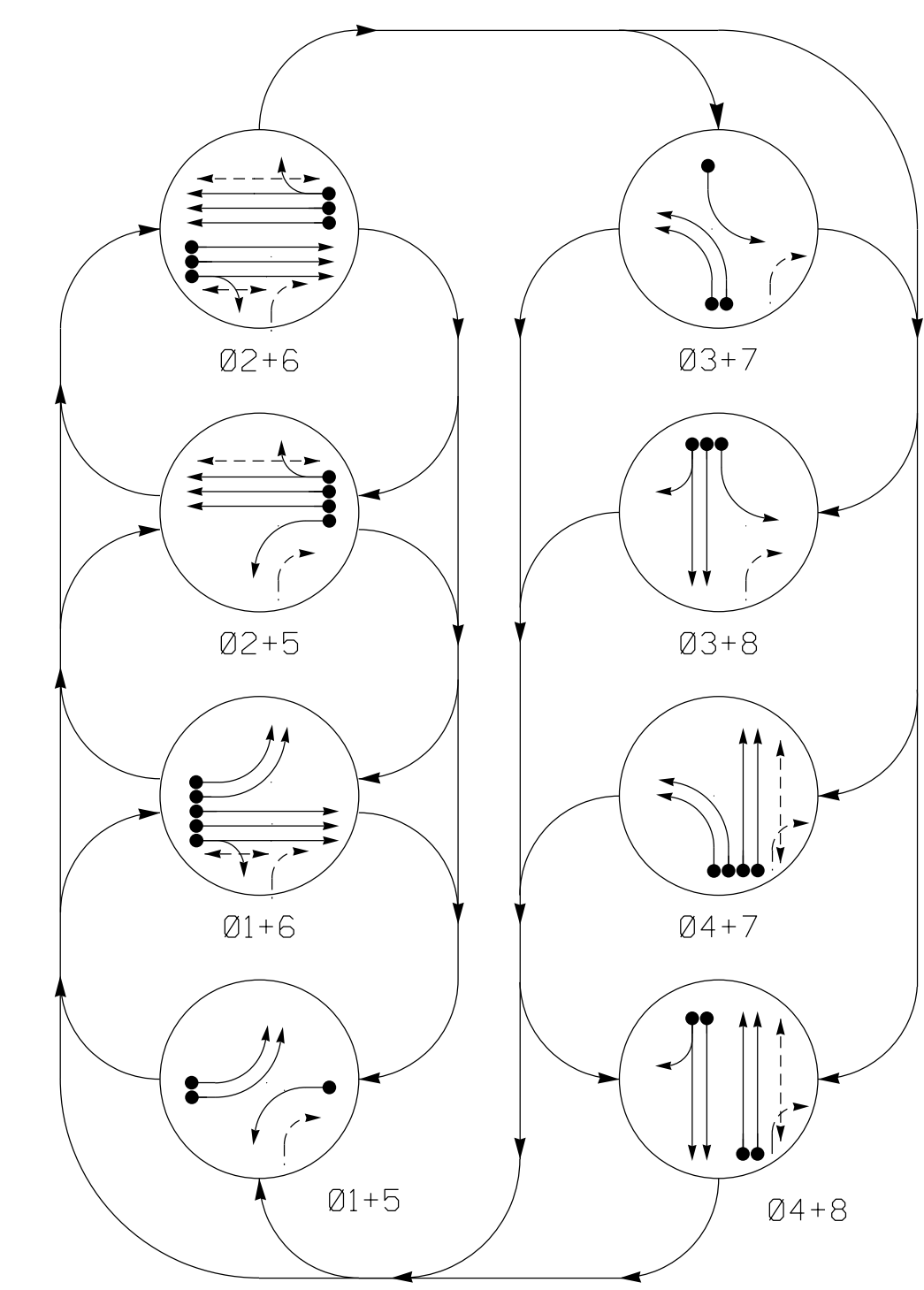
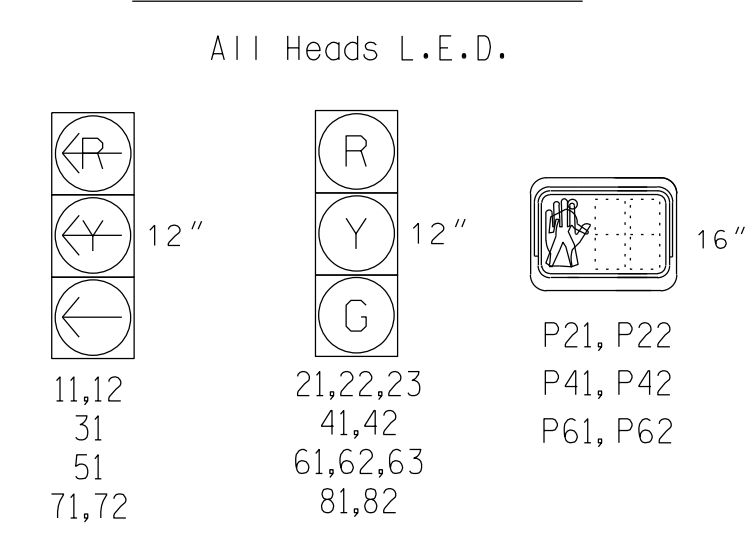


TABLE OF OPERATION

| SIGNAL FACE | PHASE | | | | | | | | FLASH |
|-------------|-------|------|------|------|------|------|------|------|-------|
| | Ø1+5 | Ø1+6 | Ø2+5 | Ø2+6 | Ø3+7 | Ø3+8 | Ø4+7 | Ø4+8 | |
| 11,12 | ← | ← | ← | ← | ← | ← | ← | ← | ← |
| 21,22 | R | R | G | G | R | R | R | R | Y |
| 31 | ← | ← | ← | ← | ← | ← | ← | ← | ← |
| 41,42 | R | R | R | R | R | R | G | G | R |
| 51 | ← | ← | ← | ← | ← | ← | ← | ← | ← |
| 61,62 | R | G | R | G | R | R | R | R | Y |
| 71,72 | ← | ← | ← | ← | ← | ← | ← | ← | ← |
| 81,82 | R | R | R | R | R | G | R | G | R |
| P21,P22 | DW | DW | W | W | DW | DW | DW | DRK | |
| P41,P42 | DW | DW | DW | DW | DW | W | W | DRK | |
| P61,P62 | DW | W | DW | W | DW | DW | DW | DRK | |

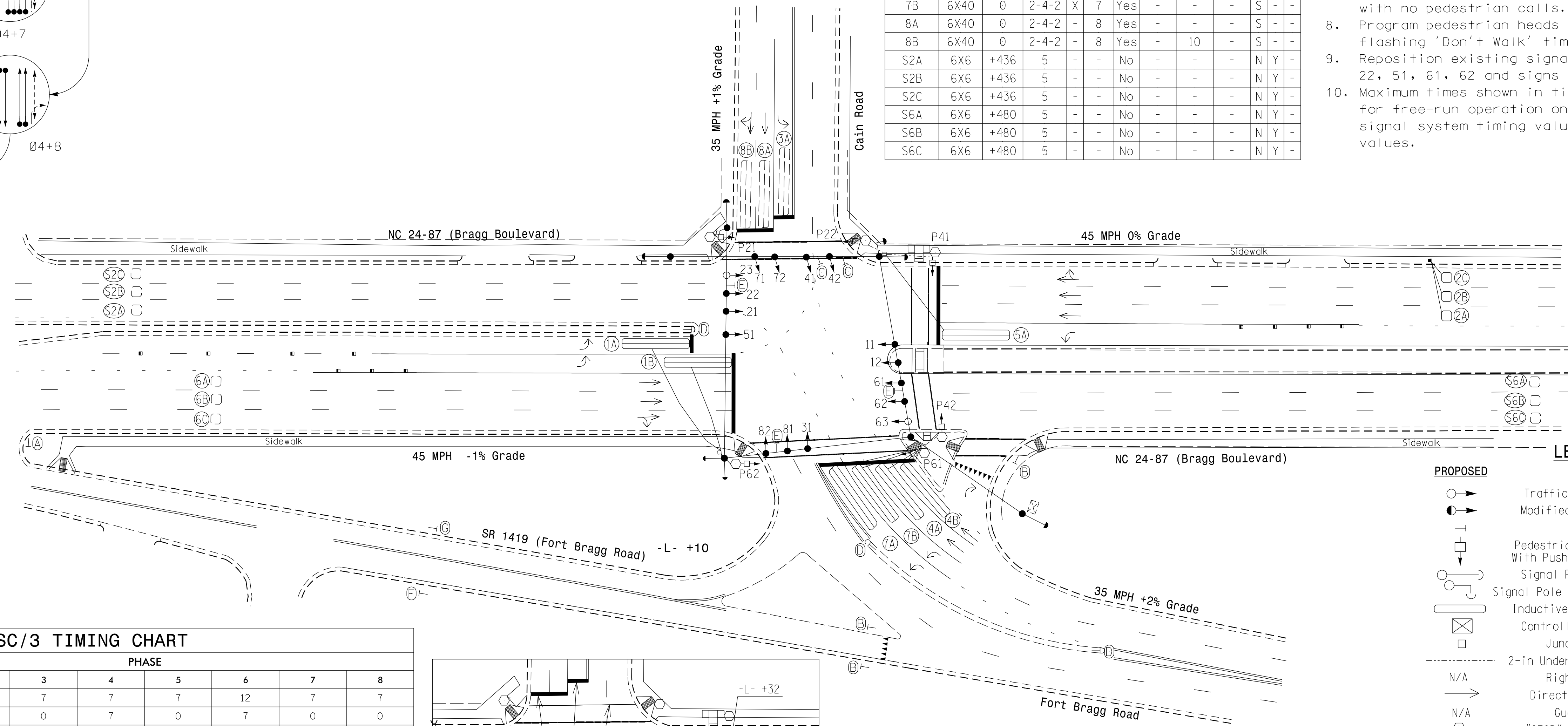
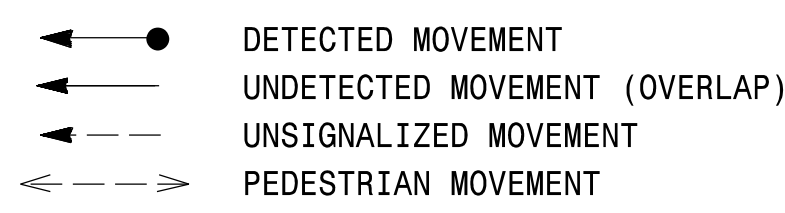
SIGNAL FACE I.D.



ASC/3 DETECTOR INSTALLATION CHART

| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PROGRAMMING | | | | | | |
|------|-----------|----------------------------|-------|----------|-------------|---------|-------------|------------|-------------------|------|-------------|
| | | | | | PHASE | CALLING | EXTEND TIME | DELAY TIME | USE ADDED INITIAL | TYPE | LOOP SYSTEM |
| 1A | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - |
| 1B | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - |
| 2A | 6X6 | 300 | 6 | - | 2 | Yes | - | - | - | X | N |
| 2B | 6X6 | 300 | 6 | - | 2 | Yes | - | - | - | X | N |
| 2C | 6X6 | 300 | 6 | - | 2 | Yes | - | - | - | X | N |
| 3A | 6X40 | 0 | 2-4-2 | - | 3 | Yes | - | 3 | - | S | - |
| 4A | 6X40 | 0 | 2-4-2 | X | 4 | Yes | - | - | - | S | - |
| 4B | 6X40 | 0 | 2-4-2 | X | 4 | Yes | - | - | - | S | - |
| 5A | 6X40 | 0 | 2-4-2 | X | 5 | Yes | - | - | - | S | - |
| 6A | 6X6 | 300 | 6 | - | 6 | Yes | - | - | - | X | N |
| 6B | 6X6 | 300 | 6 | - | 6 | Yes | - | - | - | X | N |
| 6C | 6X6 | 300 | 6 | - | 6 | Yes | - | - | - | X | N |
| 7A | 6X40 | 0 | 2-4-2 | X | 7 | Yes | - | 3 | - | S | - |
| 7B | 6X40 | 0 | 2-4-2 | X | 7 | Yes | - | - | - | S | - |
| 8A | 6X40 | 0 | 2-4-2 | - | 8 | Yes | - | - | - | S | - |
| 8B | 6X40 | 0 | 2-4-2 | - | 8 | Yes | - | 10 | - | S | - |
| S2A | 6X6 | +436 | 5 | - | - | No | - | - | - | N | Y |
| S2B | 6X6 | +436 | 5 | - | - | No | - | - | - | N | Y |
| S2C | 6X6 | +436 | 5 | - | - | No | - | - | - | N | Y |
| S6A | 6X6 | +480 | 5 | - | - | No | - | - | - | N | Y |
| S6B | 6X6 | +480 | 5 | - | - | No | - | - | - | N | Y |
| S6C | 6X6 | +480 | 5 | - | - | No | - | - | - | N | Y |

PHASING DIAGRAM DETECTION LEGEND



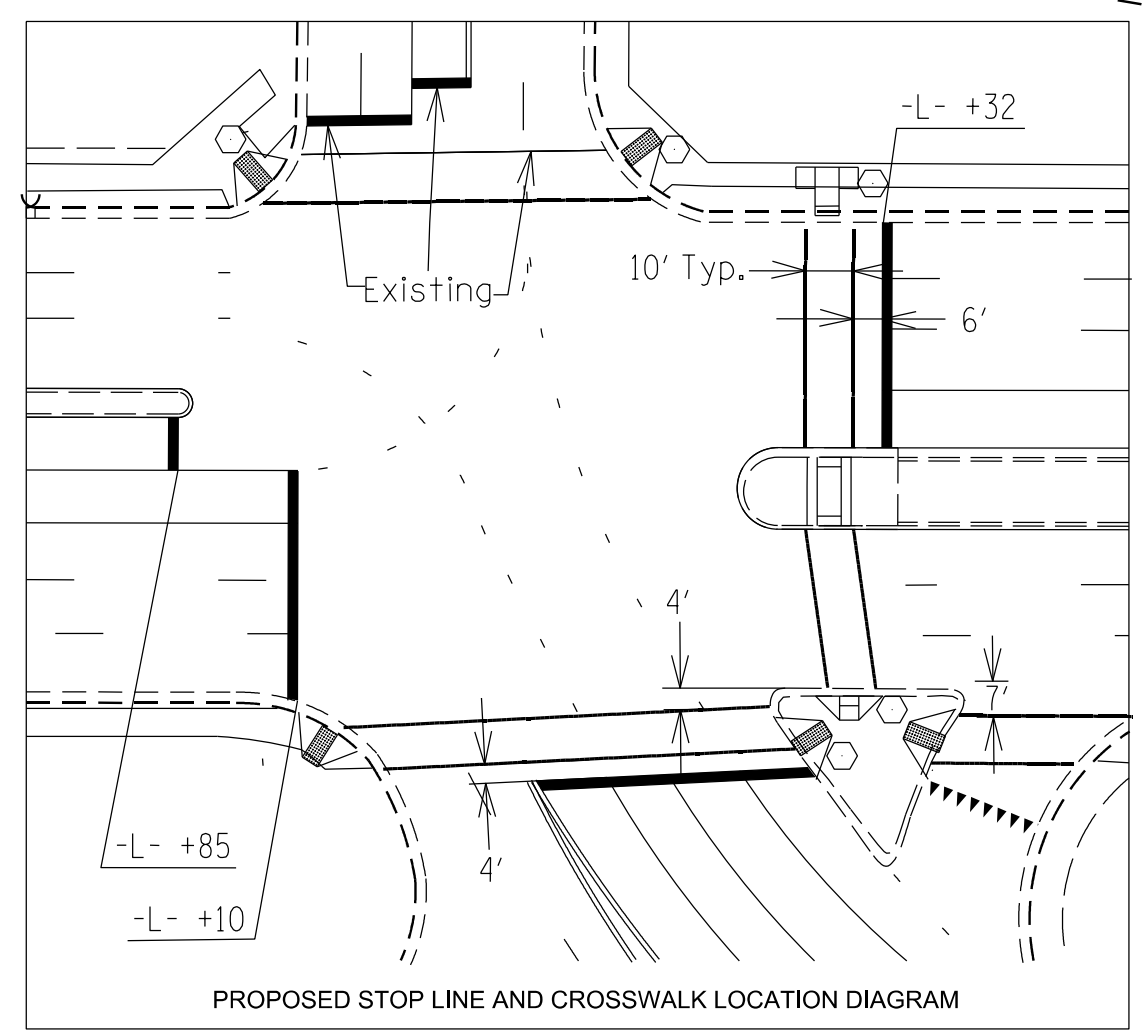
LEGEND

| PROPOSED | EXISTING |
|----------|----------|
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| | |

ASC/3 TIMING CHART

| FEATURE | PHASE | | | | | | | |
|-------------------------|-------|-------------|-----|-----|-----|-------------|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Min Green * | 7 | 12 | 7 | 7 | 7 | 12 | 7 | 7 |
| Walk * | 0 | 7 | 0 | 7 | 0 | 7 | 0 | 0 |
| Ped Clear | 0 | 17 | 0 | 25 | 0 | 23 | 0 | 0 |
| Veh. Extension * | 2.0 | 6.0 | 2.0 | 2.0 | 2.0 | 6.0 | 2.0 | 2.0 |
| Max 1 * | 15 | 90 | 15 | 15 | 15 | 90 | 20 | 15 |
| Yellow | 3.0 | 4.6 | 3.0 | 3.7 | 3.0 | 4.6 | 3.0 | 3.8 |
| Red Clear | 2.9 | 1.9 | 3.9 | 2.6 | 3.5 | 1.9 | 3.8 | 2.6 |
| Actuations B4 Add * | - | 0 | - | - | - | 0 | - | - |
| Seconds / Actuation * | - | 1.5 | - | - | - | 1.5 | - | - |
| Max Initial * | - | 32 | - | - | - | 34 | - | - |
| Time Before Reduction * | - | 15 | - | - | - | 15 | - | - |
| Time To Reduce * | - | 45 | - | - | - | 45 | - | - |
| Minimum Gap | - | 3.0 | - | - | - | 3.0 | - | - |
| Locking Detector | - | X | - | - | - | X | - | - |
| Recall Position | - | VEH. RECALL | - | - | - | VEH. RECALL | - | - |
| Dual Entry | - | - | - | - | - | - | - | - |
| Simultaneous Gap | X | X | X | X | X | X | X | X |

* 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.



LEGEND

| | |
|--|-------------------------|
| | Type II Signal Pedestal |
|--|-------------------------|

Signal Upgrade

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27607
P: 919-829-0328

750 N. Greenfield Pkwy, Garner, NC 27529
SCALE
0 40
1" = 40'

NC 24-87 (Bragg Boulevard) at Fort Bragg Road / Cain Road

Division 6 Cumberland County Fayetteville

PLAN DATE: December 2022 REVIEWED BY: M. L. Styles

PREPARED BY: J. Ma REVIEWED BY:

REVISIONS: INIT. DATE

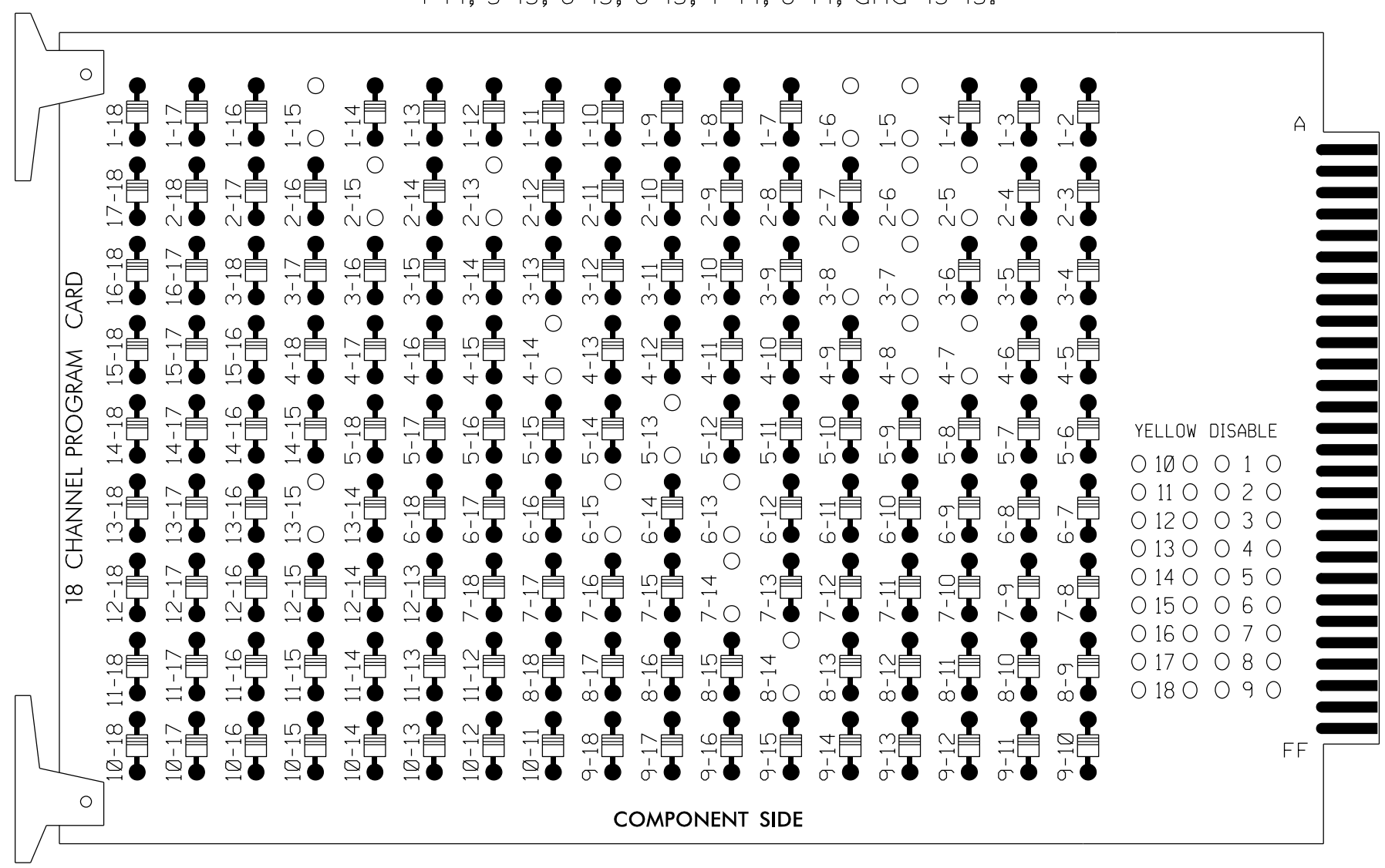
1/6/2023

SIG. INVENTORY NO. 06-0425

EDI MODEL 2018ECLip-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

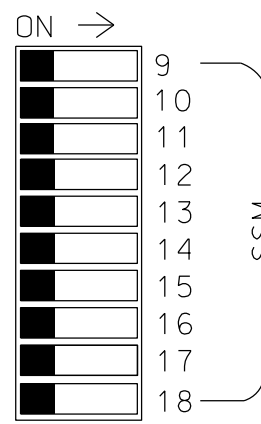
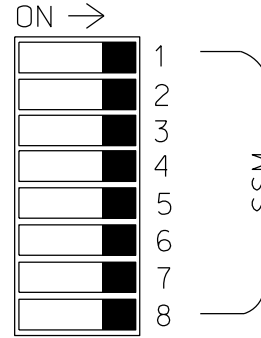
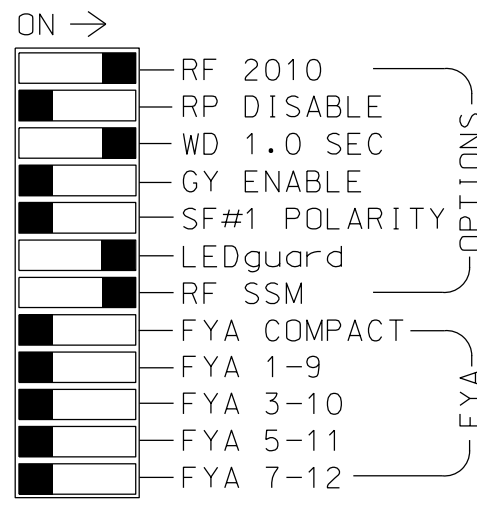
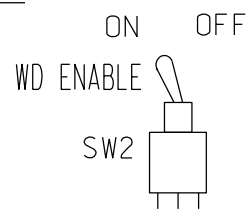
REMOVE DIODE JUMPERS 1-5, 1-6, 1-15, 2-5, 2-6, 2-13, 2-15, 3-7, 3-8, 4-7, 4-8, 4-14, 5-13, 6-13, 6-15, 7-14, 8-14, and 13-15.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.



■ = DENOTES POSITION OF SWITCH

NOTES

- 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.
- Program controller to start up in phase 2 Walk and 6 Walk.
- The cabinet and controller are part of the Fayetteville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11
 PHASES USED.....1,2,2PED,3,4,4PED,5,6,6PED,7,8
 OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

| LOAD SWITCH NO. | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 |
|---------------------|-------|----------|----------|-----|-------|----------|-----|----------|----------|-------|-------|-------|
| CMU CHANNEL NO. | 1 | 2 | 13 | 3 | 4 | 14 | 5 | 6 | 15 | 7 | 8 | 16 |
| PHASE | 1 | 2 | 2 PED | 3 | 4 | 4 PED | 5 | 6 | 6 PED | 7 | 8 | 8 PED |
| SIGNAL HEAD NO. | 11,12 | 21,22,23 | P21, P22 | 31 | 41,42 | P41, P42 | 51 | 61,62,63 | P61, P62 | 71,72 | 81,82 | NU |
| RED | | 128 | | | 101 | | | 134 | | | 107 | |
| YELLOW | | 129 | | | 102 | | | 135 | | | 108 | |
| GREEN | | 130 | | | 103 | | | 136 | | | 109 | |
| RED ARROW | 125 | | | 116 | | | 131 | | | 122 | | |
| YELLOW ARROW | 126 | | | 117 | | | 132 | | | 123 | | |
| GREEN ARROW | 127 | | | 118 | | | 133 | | | 124 | | |
| Hand icon | | | 113 | | | 104 | | | 119 | | | |
| Walking person icon | | | 115 | | | 106 | | | 121 | | | |

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

| FILE "I" | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|----------|-----|----------|----------|-----|---------------|---------------|---------------|---------------|---------------|----|-------------|----------|-------------|-------------|
| ∅ 1 | ∅ 1 | ∅ 2 | ∅ 2 | ∅ 3 | ∅ 4 | SYS. DET. S2A | S | SYS. DET. S2A | S | S | ∅ 2 PED | ∅ 6 PED | FS | DC ISOLATOR |
| NOT USED | 2A | 2C | NOT USED | 4B | SYS. DET. S2B | S | SYS. DET. S6A | S | S | S | DC ISOLATOR | NOT USED | DC ISOLATOR | DC ISOLATOR |
| FILE "J" | ∅ 5 | ∅ 6 | ∅ 6 | S | S | ∅ 7 | ∅ 8 | S | SYS. DET. S6B | S | S | S | S | S |
| NOT USED | 6B | NOT USED | NOT USED | 7B | 8B | ∅ 7 | ∅ 8 | S | SYS. DET. S6C | S | S | S | S | S |

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

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE | CALL | EXTEND TIME | DELAY TIME | ADDED INITIAL | DETECTOR TYPE |
|----------|---------------|-----------------|---------|--------------|------------|------|-------------|------------|---------------|---------------|
| 1A | TB2-1,2 | I1U | 56 | 1 | 1 | YES | | | | S |
| 1B | TB2-5,6 | I2U | 39 | 2 | 1 | YES | | | | S |
| 2A | TB2-7,8 | I2L | 43 | 12 | 2 | YES | | | X | N |
| 2B | TB2-9,10 | I3U | 63 | 32 | 2 | YES | | | X | N |
| 2C | TB2-11,12 | I3L | 76 | 42 | 2 | YES | | | X | N |
| 3A | TB4-5,6 | I5U | 58 | 3 | 3 | YES | | 3 | | S |
| 4A | TB4-9,10 | I6U | 41 | 4 | 4 | YES | | | | S |
| 4B | TB4-11,12 | I6L | 45 | 14 | 4 | YES | | | | S |
| 5A | TB3-1,2 | J1U | 55 | 5 | 5 | YES | | | | S |
| 6A | TB3-5,6 | J2U | 40 | 6 | 6 | YES | | | X | N |
| 6B | TB3-7,8 | J2L | 44 | 16 | 6 | YES | | | X | N |
| 6C | TB3-9,10 | J3U | 64 | 36 | 6 | YES | | | X | N |
| 7A | TB5-9,10 | J6U | 42 | 8 | 7 | YES | | 3 | | S |
| 7B | TB5-11,12 | J6L | 46 | 18 | 7 | YES | | | | S |
| 8A | TB7-1,2 | J7U | 66 | 38 | 8 | YES | | | | S |
| 8B | TB7-3,4 | J7L | 79 | 48 | 8 | YES | | 10 | | S |
| *S2A | TB6-1,2 | I7U | 65 | 34 | SYS | NO | | | | N |
| *S2B | TB6-3,4 | I7L | 78 | 44 | SYS | NO | | | | N |
| *S2C | TB6-9,10 | I9U | 60 | 11 | SYS | NO | | | | N |
| *S6A | TB6-11,12 | I9L | 62 | 13 | SYS | NO | | | | N |
| *S6B | TB7-9,10 | J9U | 59 | 15 | SYS | NO | | | | N |
| *S6C | TB7-11,12 | J9L | 61 | 17 | SYS | NO | | | | N |

| PED PUSH BUTTONS | | | | | |
|------------------|---------|------|----|-------|-------|
| P21,P22 | TB8-4,6 | I12U | 67 | PED 2 | 2 PED |
| P41,P42 | TB8-5,6 | I12L | 69 | PED 4 | 4 PED |
| P61,P62 | TB8-7,9 | I13U | 68 | PED 6 | 6 PED |

NOTE: INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

* System detector only. Remove any assigned vehicle phase.

INPUT FILE POSITION LEGEND: J2L



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0425
 DESIGNED: December 2022
 SEALED: 1/6/2023
 REVISED: N/A

Electrical Detail

ELECTRICAL AND PROGRAMMING DETAILS FOR:

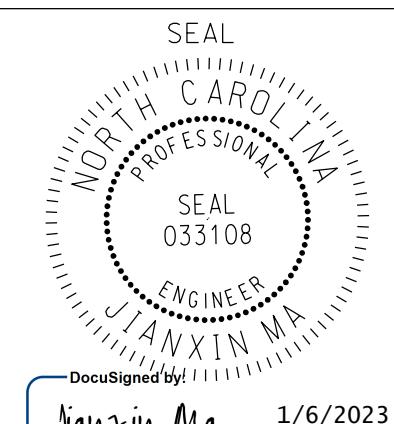
NC 24-87 (Bragg Boulevard) at Fort Bragg Road/ Cain Road



750 Greenfield Parkway, Garner, NC 27529

| | | |
|--------------------------|----------------------------|--------------|
| Division 6 | Cumberland County | Fayetteville |
| PLAN DATE: December 2022 | REVIEWED BY: M. L. Stygles | |
| PREPARED BY: J. Ma | REVIEWED BY: | |
| REVISIONS | INIT. | DATE |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DocuSigned by: J. Ma 1/6/2023 827E1953081444F DATE

SIG. INVENTORY NO. 06-0425

5 Phase Fully Actuated Fayetteville Signal System

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 and/or phase 5 may be lagged.
4. Set all detector units to presence mode.
5. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing 'Don't Walk' time only.
8. Reposition existing signal heads 21, 22, 61, and 62.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

| ASC/3 DETECTOR INSTALLATION CHART | | | | | | | | | | | |
|-----------------------------------|-----------|----------------------------|-------|----------|-------------|---------|-------------|------------|-------------------|------|-------------|
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PROGRAMMING | | | | | | |
| | | | | | PHASE | CALLING | EXTEND TIME | DELAY TIME | USE ADDED INITIAL | TYPE | SYSTEM LOOP |
| 1A | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - |
| 1B | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - |
| 1C | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | 15 | - | S | - |
| 2A | 6X6 | 300 | 4 | X | 2 | Yes | - | - | X | N | - |
| 2B | 6X6 | 300 | 4 | X | 2 | Yes | - | - | X | N | - |
| 2C | 6X6 | 300 | 4 | X | 2 | Yes | - | - | X | N | - |
| 4A | 6X40 | 0 | EXIST | - | 4 | Yes | - | - | - | S | - |
| 5A | 6X40 | 0 | 2-4-2 | X | 5 | Yes | - | - | - | S | - |
| 6A | 6X6 | 300 | EXIST | - | 6 | Yes | - | - | X | N | - |
| 6B | 6X6 | 300 | EXIST | - | 6 | Yes | - | - | X | N | - |
| 6C | 6X6 | 300 | EXIST | - | 6 | Yes | - | - | X | N | - |

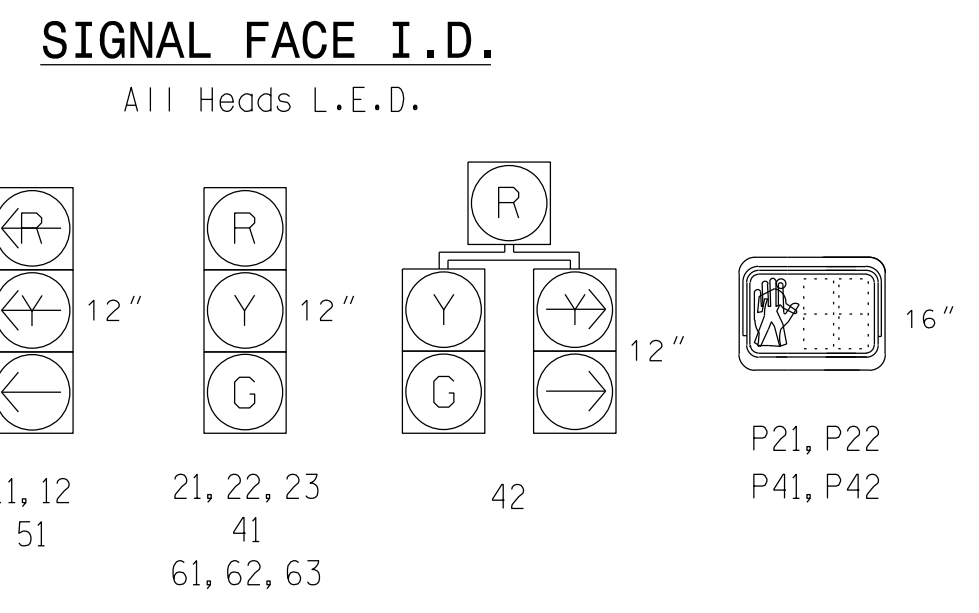
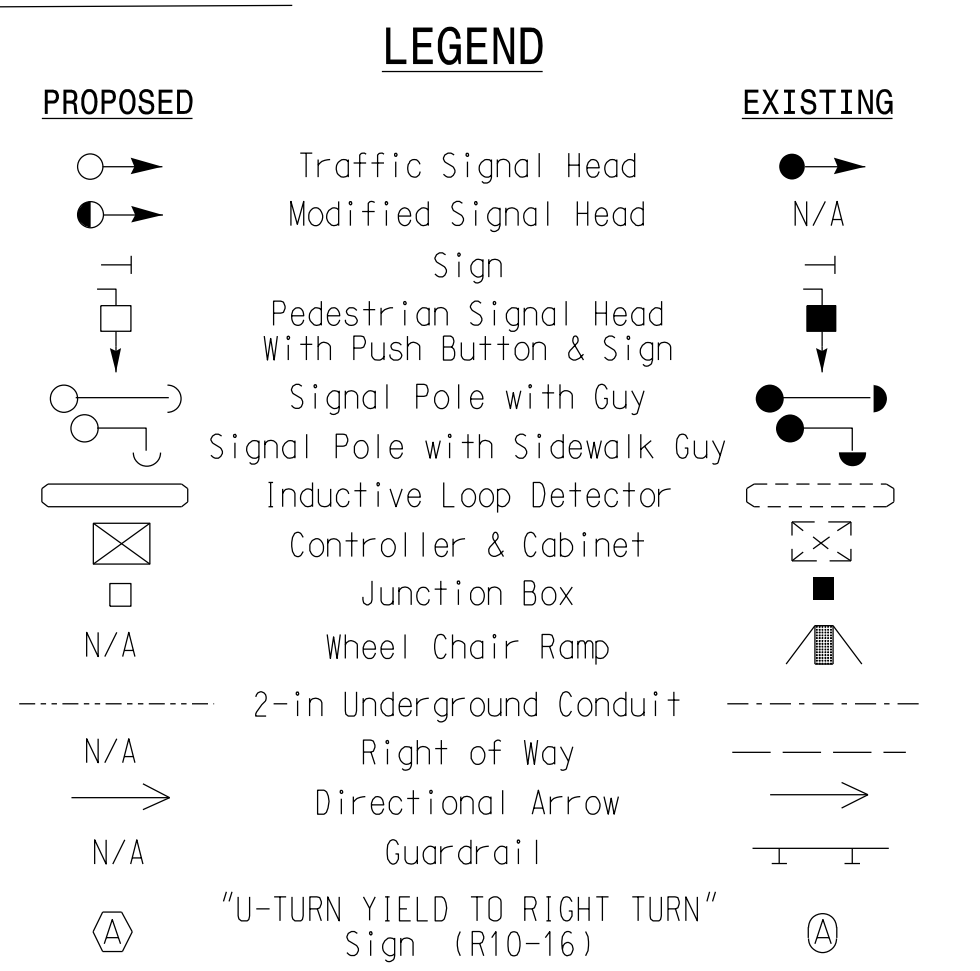
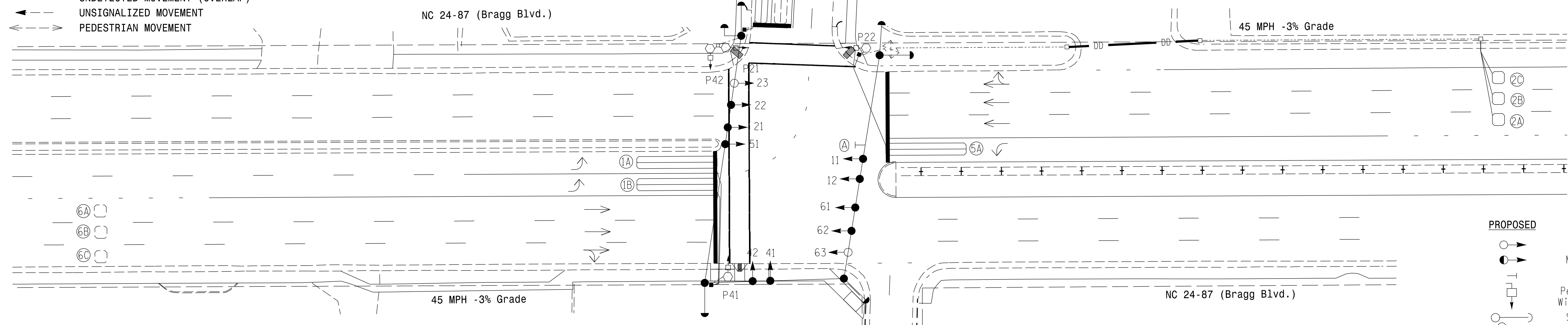
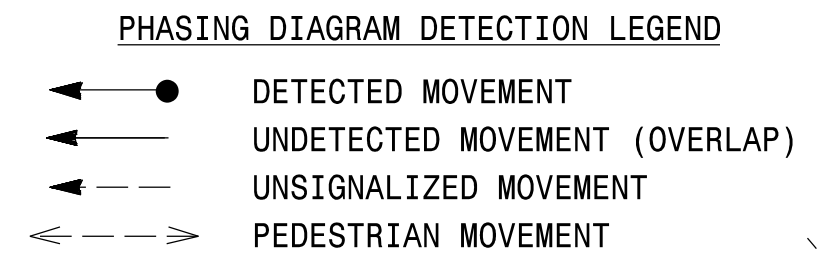
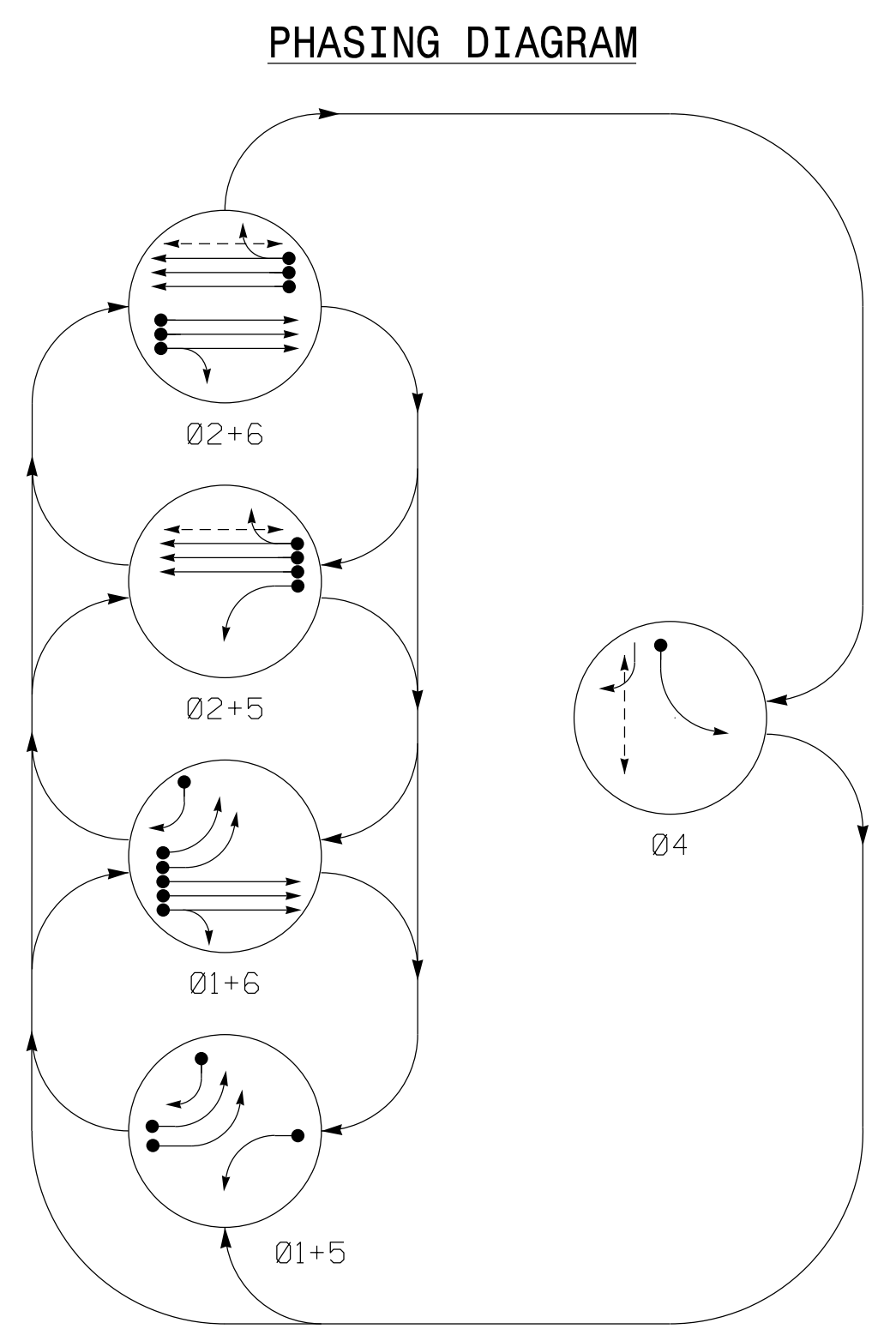


TABLE OF OPERATION

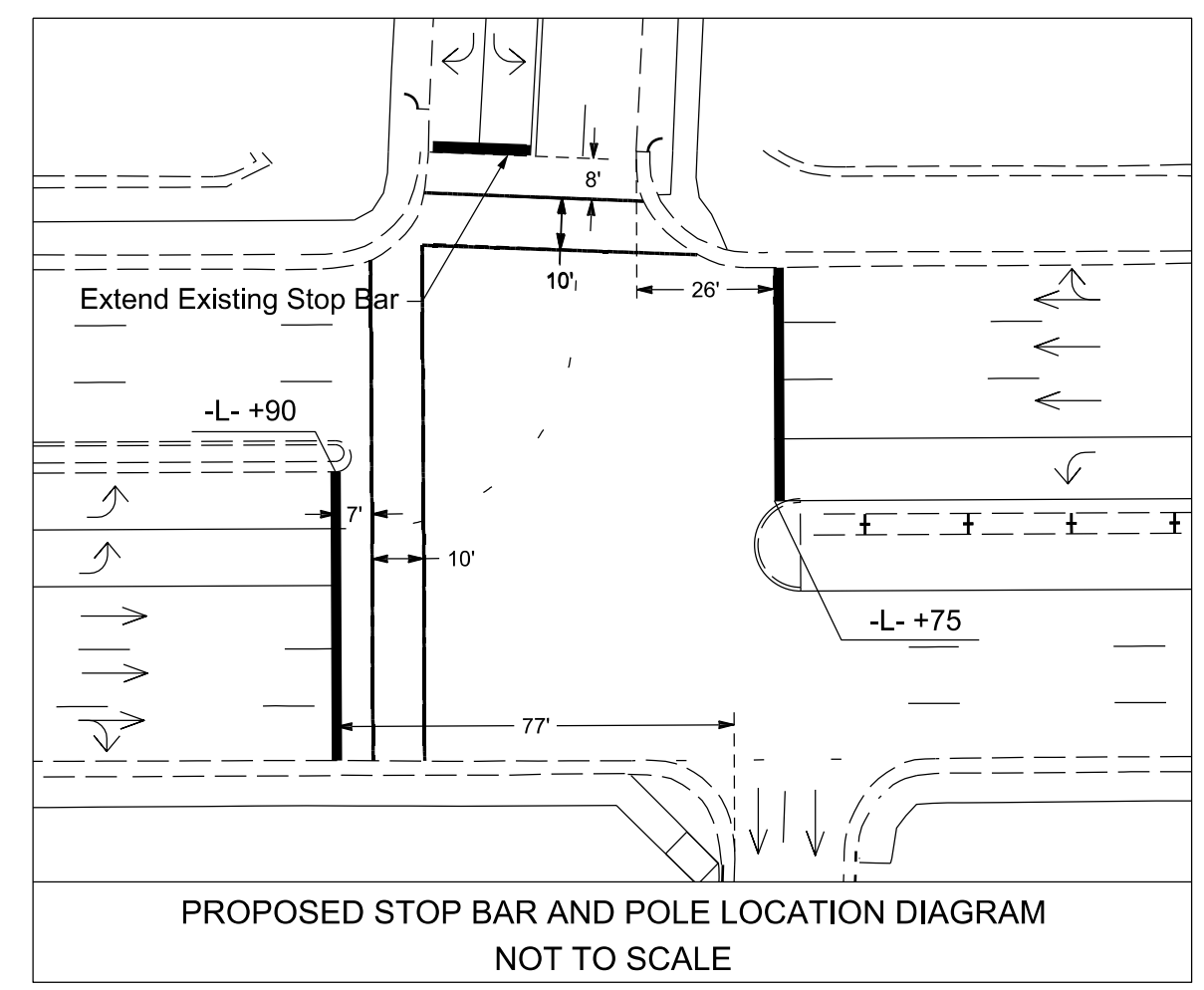
| SIGNAL FACE | PHASE | | | | | |
|-------------|-------|------|------|------|----|-----|
| | Ø1+5 | Ø1+6 | Ø2+5 | Ø2+6 | Ø4 | FL |
| 11, 12 | ← | ← | → | → | → | → |
| 21, 22, 23 | R | R | G | G | R | Y |
| 41 | R | R | R | R | G | R |
| 42 | R | R | R | R | G | R |
| 51 | ← | ← | → | → | → | → |
| 61, 62, 63 | R | G | R | G | R | Y |
| P21,P22 | DW | DW | W | W | DW | DRK |
| P41,P42 | DW | DW | DW | DW | W | DRK |



ASC/3 TIMING CHART

| FEATURE | PHASE | | | | |
|-------------------------|-------|-------------|-----|-----|-------------|
| | 1 | 2 | 4 | 5 | 6 |
| Min Green * | 7 | 12 | 7 | 7 | 12 |
| Walk * | 0 | 7 | 7 | 0 | 0 |
| Ped Clear | 0 | 11 | 26 | 0 | 0 |
| Veh. Extension * | 2.0 | 6.0 | 2.0 | 2.0 | 6.0 |
| Max 1 * | 25 | 90 | 25 | 25 | 90 |
| Yellow | 3.0 | 4.8 | 3.1 | 3.0 | 4.8 |
| Red Clear | 2.8 | 1.1 | 3.4 | 2.9 | 1.6 |
| Actuations B4 Add * | - | 0 | - | - | 0 |
| Seconds / Actuation * | - | 1.0 | - | - | 1.0 |
| Max Initial * | - | 34 | - | - | 34 |
| Time Before Reduction * | - | 15 | - | - | 15 |
| Time To Reduce * | - | 45 | - | - | 45 |
| Minimum Gap | - | 3.0 | - | - | 3.0 |
| Locking Detector | - | X | - | - | X |
| Recall Position | - | VEH. RECALL | - | - | VEH. RECALL |
| Dual Entry | - | - | - | - | - |
| Simultaneous Gap | X | X | X | X | X |

* 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.



Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NC 24-87 (Bragg Boulevard)
at
Elm Street

Division 6 Cumberland County Fayetteville

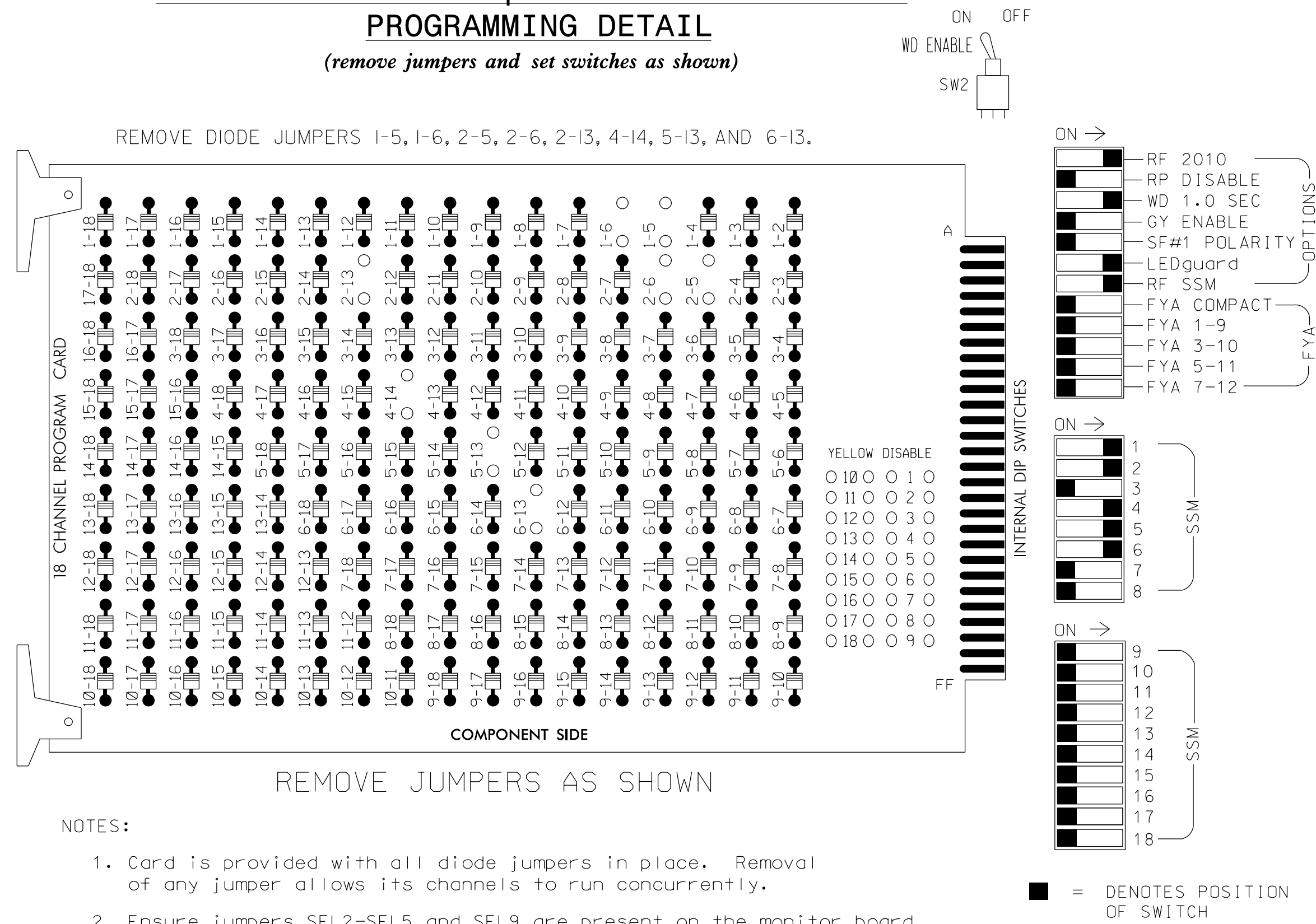
PLAN DATE: December 2022 REVIEWED BY: J. Ma
PREPARED BY: J. Townsend REVIEWED BY: M.L. Styles

1/6/2023

SIG. INVENTORY NO. 06-0032

EDI MODEL 2018ECLip-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. Integrate monitor with Ethernet network in cabinet.

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. Program controller to start up in phase 2 Walk and 6 Green.
3. The cabinet and controller are part of the Fayetteville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S5,S7,S8
 PHASES USED.....1,2,2PED,4,4PED,5,6
 OVERLAPS.....NONE

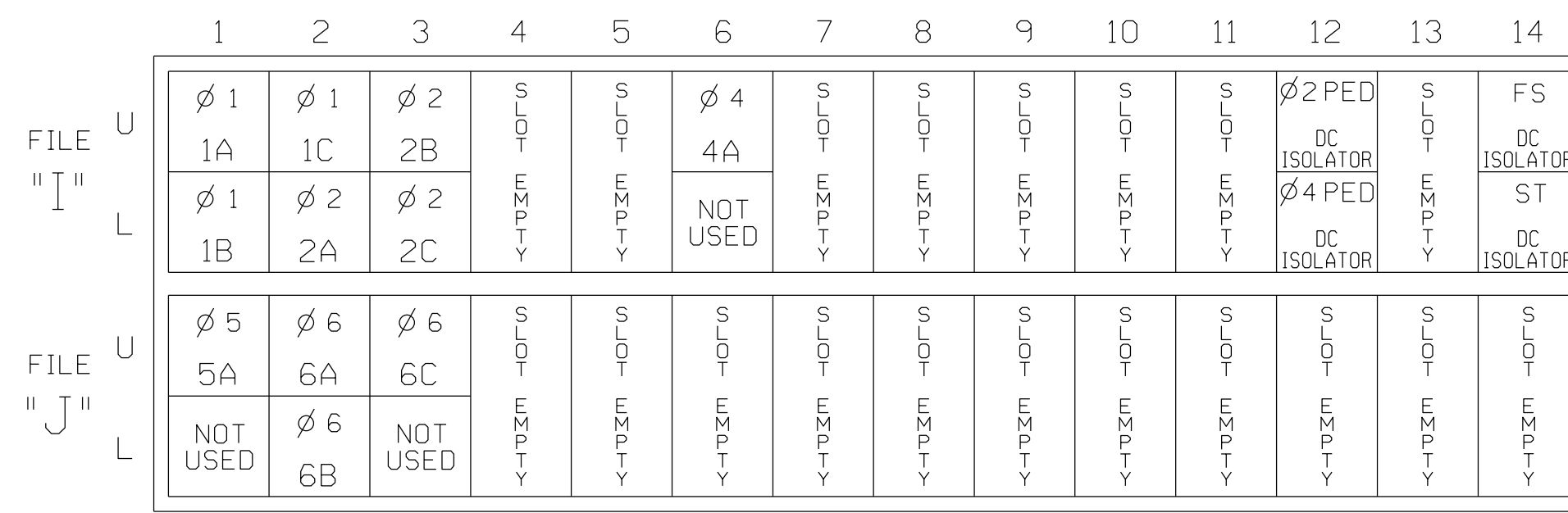
SIGNAL HEAD HOOK-UP CHART

| LOAD SWITCH NO. | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 |
|-----------------|-------|-----|-------|----------|-----|-------|----------|-----|-------|-----|-----|-------|
| CMU CHANNEL NO. | 1 | 2 | 13 | 3 | 4 | 14 | 5 | 6 | 15 | 7 | 8 | 16 |
| PHASE | 1 | 2 | 2 PED | 3 | 4 | 4 PED | 5 | 6 | 6 PED | 7 | 8 | 8 PED |
| SIGNAL HEAD NO. | 11,12 | 42 | 21,22 | P21, P22 | NU | 41,42 | P41, P42 | 51 | 61,62 | NU | NU | NU |
| RED | | | 128 | | 101 | | | 134 | | | | |
| YELLOW | | | 129 | | 102 | | | 135 | | | | |
| GREEN | | | 130 | | 103 | | | 136 | | | | |
| RED ARROW | 125 | | | | | | | 131 | | | | |
| YELLOW ARROW | 126 | 126 | | | | | | 132 | | | | |
| GREEN ARROW | 127 | 127 | | | | | | 133 | | | | |
| Hand icon | | | | 113 | | | | 104 | | | | |
| Walker icon | | | | 115 | | | | 106 | | | | |

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)



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

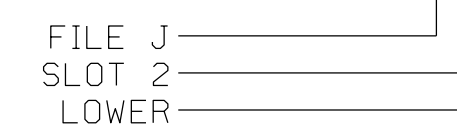
FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE | CALL | EXTEND TIME | DELAY TIME | ADDED INITIAL | DETECTOR TYPE |
|------------------|---------------|-----------------|---------|--------------|------------|------|-------------|------------|---------------|---------------|
| 1A | TB2-1,2 | I1U | 56 | 1 | 1 | YES | | | | S |
| 1B | TB2-3,4 | I1L | 56 | 1 | 1 | YES | | | | S |
| 1C | TB2-5,6 | I2U | 39 | 2 | 1 | YES | | 15 | | S |
| 2A | TB2-7,8 | I2L | 43 | 12 | 2 | YES | | | X | N |
| 2B | TB2-9,10 | I3U | 63 | 32 | 2 | YES | | | X | N |
| 2C | TB2-11,12 | I3L | 76 | 42 | 2 | YES | | | X | N |
| 4A | TB4-9,10 | I6U | 41 | 4 | 4 | YES | | | | S |
| 5A | TB3-1,2 | J1U | 55 | 5 | 5 | YES | | | | S |
| 6A | TB3-5,6 | J2U | 40 | 6 | 6 | YES | | | X | N |
| 6B | TB3-7,8 | J2L | 44 | 16 | 6 | YES | | | X | N |
| 6C | TB3-9,10 | J3U | 64 | 36 | 6 | YES | | | X | N |
| PED PUSH BUTTONS | | | | | | | | | | |
| P21,P22 | TB8-4,6 | I12U | 67 | PED 2 | 2 | PED | | | | |
| P41,P42 | TB8-5,6 | I12L | 69 | PED 4 | 4 | PED | | | | |

INSTALL DC ISOLATORS IN INPUT FILE SLOT 112.

INPUT FILE POSITION LEGEND: J2L



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

Electrical Detail - Sheet 1 of 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

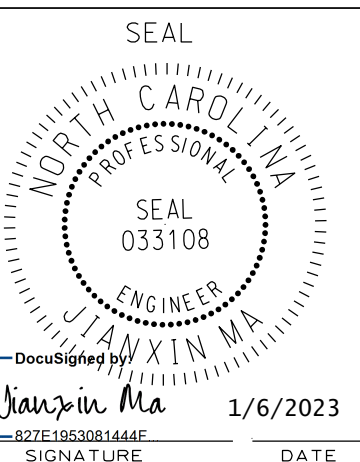
NC 24-87 (Bragg Boulevard)
at
Elm Street
Division 6 Cumberland County Fayetteville

Prepared for the Offices of:
Traffic Engineering and Safety Studies
CUMBERLAND COUNTY
DEPARTMENT OF TRANSPORTATION
Signal Management Section

750 N. Greenfield Parkway, Garner, NC 27529

PLAN DATE: December 2022 REVIEWED BY: J. Ma
PREPARED BY: J. Townsend REVIEWED BY: M.L. Stygles

REVISIONS INIT. DATE



1/6/2023
DATE

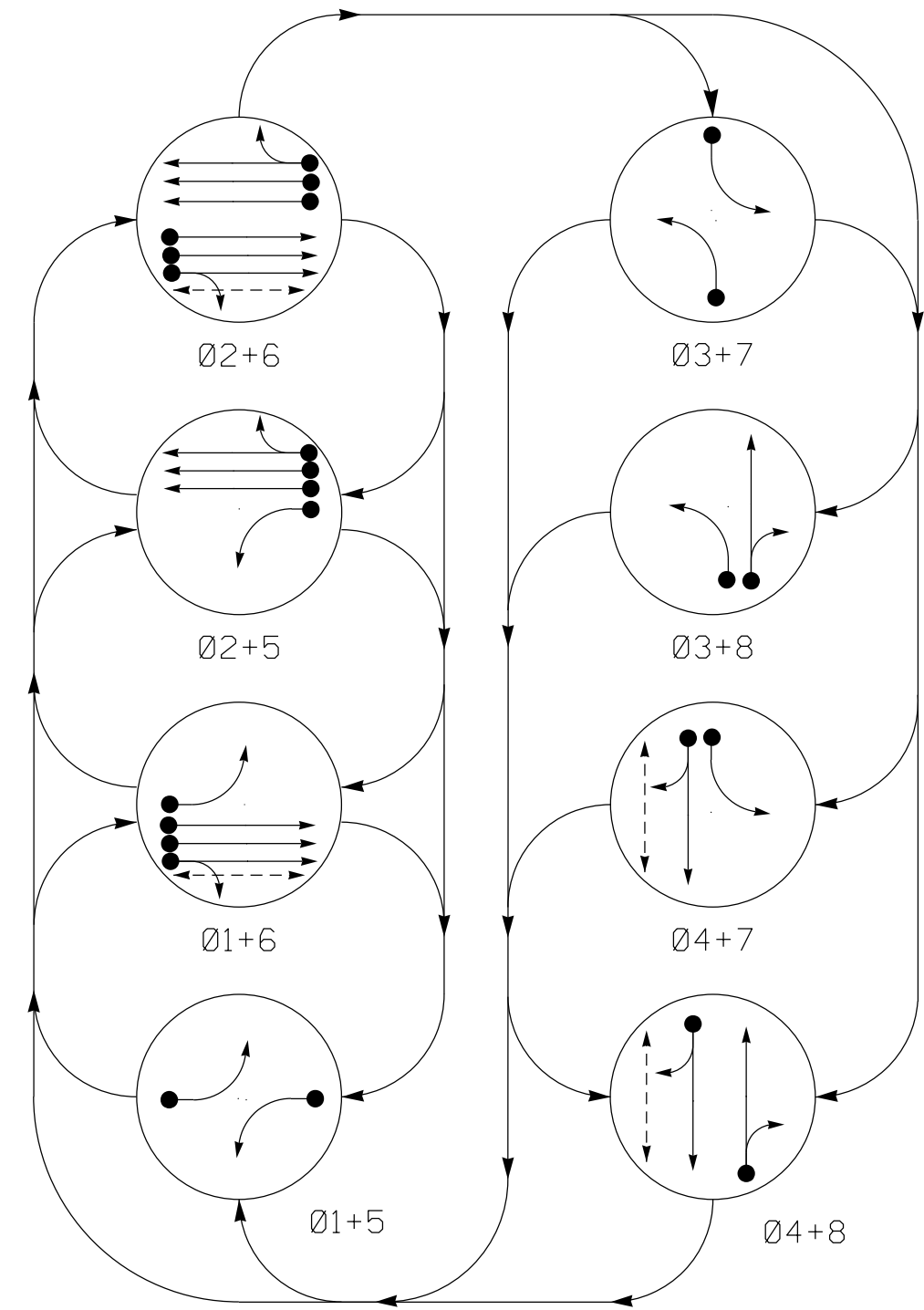
SIG. INVENTORY NO. 06-0032

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0032
DESIGNED: December 2022
SEALED: 1/6/2023
REVISED: N/A



\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$SYSDON\$\$\$\$\$
\$\$\$\$\$SYSDON\$\$\$\$\$
\$\$\$\$\$SYSDON\$\$\$\$\$

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

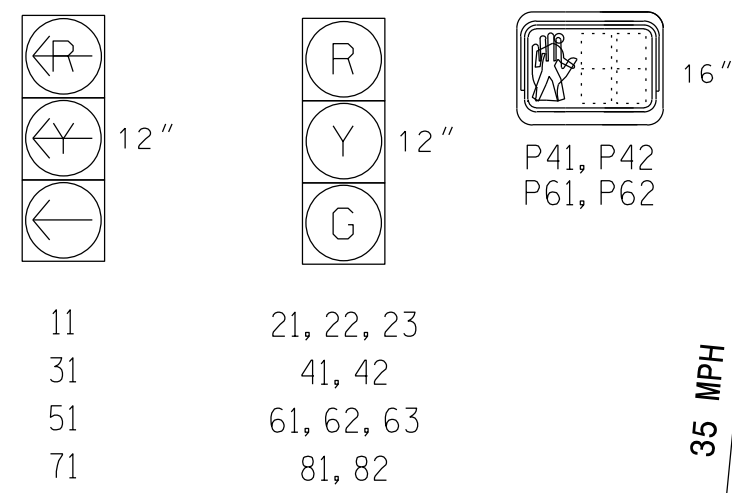
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

| SIGNAL FACE | PHASE | | | | | | | |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Ø 1 + 5 | Ø 1 + 6 | Ø 2 + 5 | Ø 2 + 6 | Ø 3 + 7 | Ø 3 + 8 | Ø 4 + 7 | Ø 4 + 8 |
| 11 | ← | ← | ← | ← | ← | ← | ← | ← |
| 21,22,23 | R | R | G | G | R | R | R | Y |
| 31 | ← | ← | ← | ← | ← | ← | ← | ← |
| 41,42 | R | R | R | R | R | R | G | G |
| 51 | ← | ← | ← | ← | ← | ← | ← | ← |
| 61,62,63 | R | G | R | G | R | R | R | Y |
| 71 | ← | ← | ← | ← | ← | ← | ← | ← |
| 81,82 | R | R | R | R | R | G | R | G |
| P41,P42 | DW | DW | DW | DW | DW | DW | W | DRK |
| P61,P62 | DW | W | DW | W | DW | DW | DW | DRK |

SIGNAL FACE I.D.

All Heads L.E.D.



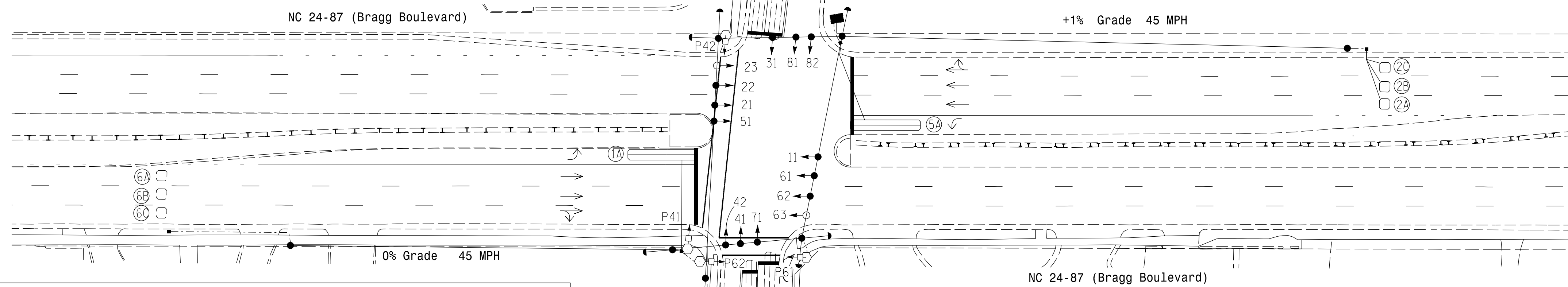
ASC/3 DETECTOR INSTALLATION CHART

| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PROGRAMMING | | | | | | | |
|------|-----------|----------------------------|-------|----------|-------------|---------|-------------|------------|-------------------|------|-------------|----------|
| | | | | | PHASE | CALLING | EXTEND TIME | DELAY TIME | USE ADDED INITIAL | TYPE | SYSTEM LOOP | NEW CARD |
| 1A | 6X40 | 0 | 2-4-2 | X | 1 | Yes | - | - | - | S | - | - |
| 2A | 6X6 | 300 | 4 | X | 2 | Yes | - | - | X | N | - | - |
| 2B | 6X6 | 300 | 4 | X | 2 | Yes | - | - | X | N | - | - |
| 2C | 6X6 | 300 | 4 | X | 2 | Yes | - | - | X | N | - | - |
| 3A | 6X60 | +2 | EXIST | - | 3 | Yes | - | 3 | - | S | - | - |
| 4A | 6X40 | +2 | EXIST | - | 4 | Yes | - | 10 | - | S | - | - |
| 5A | 6X40 | 0 | 2-4-2 | X | 5 | Yes | - | - | - | S | - | - |
| 6A | 6X6 | 300 | EXIST | - | 6 | Yes | - | - | X | N | - | - |
| 6B | 6X6 | 300 | EXIST | - | 6 | Yes | - | - | X | N | - | - |
| 6C | 6X6 | 300 | EXIST | - | 6 | Yes | - | - | X | N | - | - |
| 7A | 6X60 | +2 | EXIST | - | 7 | Yes | - | 3 | - | S | - | - |
| 8A | 6X40 | +2 | EXIST | - | 8 | Yes | - | 10 | - | S | - | - |

8 Phase Fully Actuated Fayetteville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 or phase 5 may be lagged.
- Phase 3 or phase 7 may be lagged.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Reposition existing signal heads 21, 22, 61 and 62.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

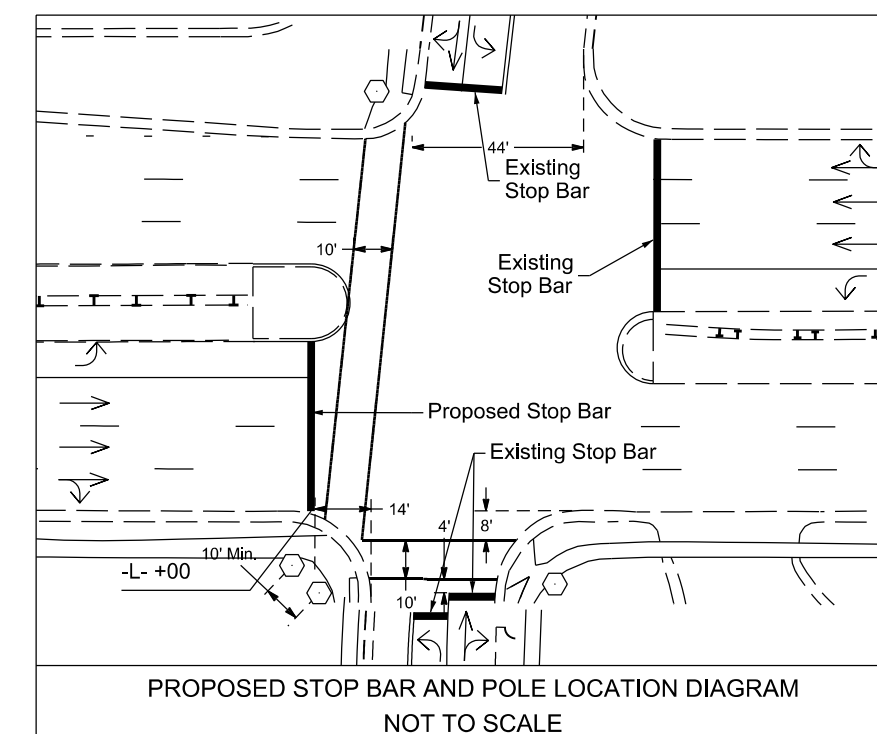


| FEATURE | PHASE | | | | | | | |
|-------------------------|-------|-------------|-----|-----|-----|-------------|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Min Green * | 7 | 12 | 7 | 7 | 7 | 12 | 7 | 7 |
| Walk * | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 0 |
| Ped Clear | 0 | 0 | 0 | 27 | 0 | 6 | 0 | 0 |
| Veh. Extension * | 2.0 | 6.0 | 2.0 | 2.0 | 2.0 | 6.0 | 2.0 | 2.0 |
| Max I * | 20 | 90 | 20 | 20 | 20 | 90 | 20 | 20 |
| Yellow | 3.0 | 4.4 | 3.0 | 3.0 | 3.0 | 4.5 | 3.0 | 3.3 |
| Red Clear | 2.9 | 1.1 | 3.1 | 3.2 | 3.3 | 1.0 | 3.2 | 3.2 |
| Red Revert | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Actuations B4 Add * | - | 0 | - | - | - | 0 | - | - |
| Seconds /Actuation * | - | 1.5 | - | - | - | 1.5 | - | - |
| Max Initial * | - | 34 | - | - | - | 34 | - | - |
| Time Before Reduction * | - | 15 | - | - | - | 15 | - | - |
| Time To Reduce * | - | 45 | - | - | - | 45 | - | - |
| Minimum Gap | - | 3.0 | - | - | - | 3.0 | - | - |
| Locking Detector | - | X | - | - | - | X | - | - |
| Recall Position | - | VEH. RECALL | - | - | - | VEH. RECALL | - | - |
| Dual Entry | - | - | - | - | - | - | - | - |
| Simultaneous Gap | X | X | X | X | X | X | X | X |

* 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.

LEGEND

- | PROPOSED | EXISTING |
|----------|----------|
| | |
| | N/A |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| N/A | |
| | |
| | |



Signal Upgrade



VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

Prepared for the Offices of:
TRANSPORTATION MOBILITY AND SAFETY DIVISION
DEPARTMENT OF NORTH CAROLINA TRANSPORTATION
SIGNAL DESIGN SECTION
750 N. Greenfield Pkwy, Garner, NC 27529

NC 24-87 (Bragg Boulevard) at Stamper Road
Division 6 Cumberland County Fayetteville
PLAN DATE: December 2022 REVIEWED BY: J. Ma
PREPARED BY: J. Townsend REVIEWED BY: M.L. Stygles

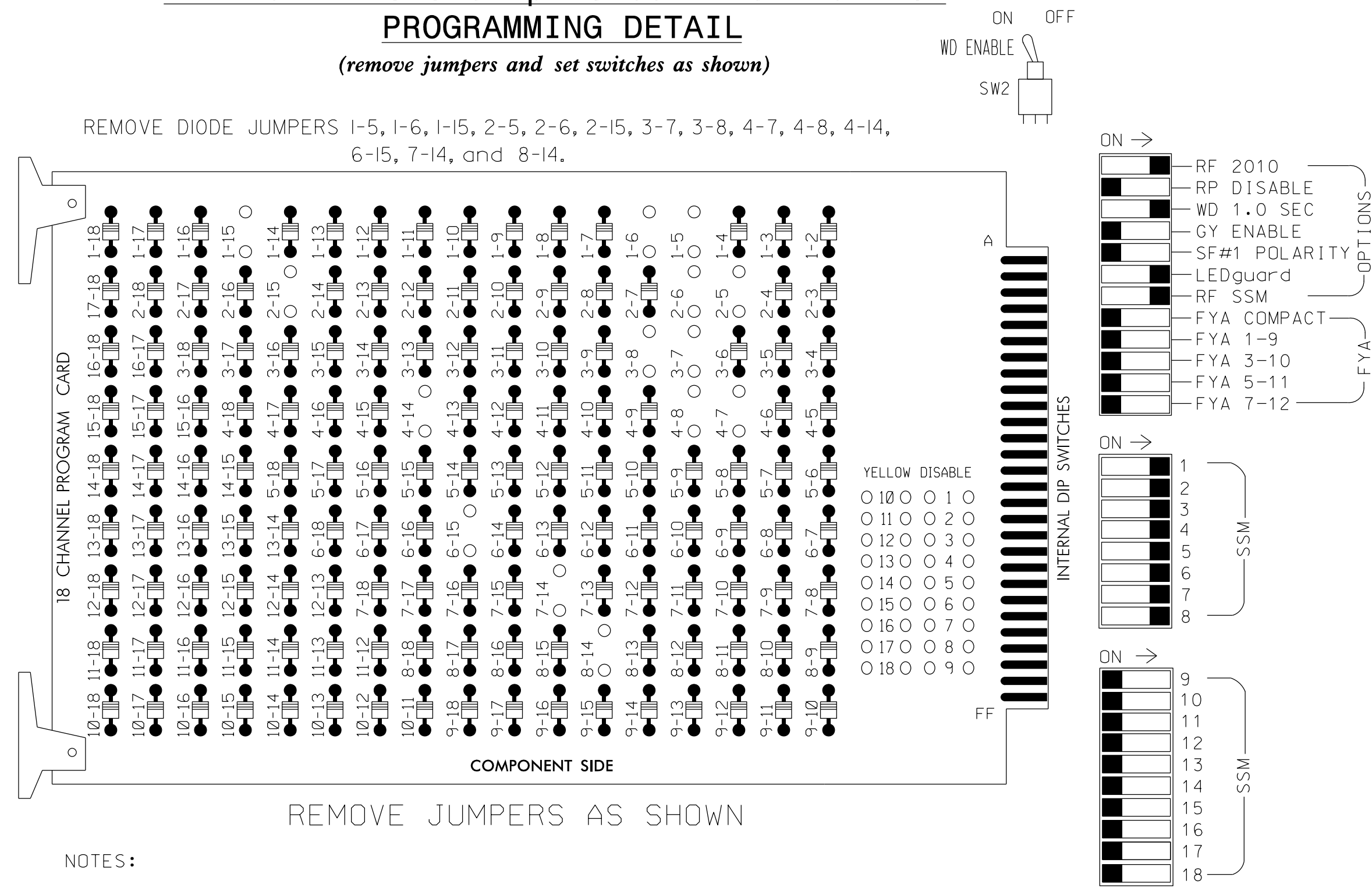
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEERS
SEAL 033108
J. Ma
1/6/2023
DATE

SCALE
0 40
1" = 40'

EDI MODEL 2018ECLip-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.

NOTES

- 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.
- Program controller to start up in phase 2 Green and 6 Walk.
- The cabinet and controller are part of the Fayetteville Signal System.

SIGNAL HEAD HOOK-UP CHART

| LOAD SWITCH NO. | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 |
|-----------------|-----|-------|-------|-----|-------|----------|-----|-------|----------|-----|-------|-------|
| CMU CHANNEL NO. | 1 | 2 | 13 | 3 | 4 | 14 | 5 | 6 | 15 | 7 | 8 | 16 |
| PHASE | 1 | 2 | 2 PED | 3 | 4 | 4 PED | 5 | 6 | 6 PED | 7 | 8 | 8 PED |
| SIGNAL HEAD NO. | 11 | 21,22 | NU | 31 | 41,42 | P41, P42 | 51 | 61,62 | P61, P62 | 71 | 81,82 | NU |
| RED | | 128 | | | 101 | | | 134 | | | 107 | |
| YELLOW | | 129 | | | 102 | | | 135 | | | 108 | |
| GREEN | | 130 | | | 103 | | | 136 | | | 109 | |
| RED ARROW | 125 | | | 116 | | | 131 | | | 122 | | |
| YELLOW ARROW | 126 | | | 117 | | | 132 | | | 123 | | |
| GREEN ARROW | 127 | | | 118 | | | 133 | | | 124 | | |
| | | | | | | | 104 | | | 119 | | |
| | | | | | | | 106 | | | 121 | | |

NU = Not Used

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S4,S5,S6,S7,S8,S9,S10,S11
 PHASES USED.....1,2,3,4,4 PED,5,6,6 PED,7,8
 OVERLAPS.....NONE

INPUT FILE POSITION LAYOUT

(front view)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|
| FILE "I" | ∅ 1 1A | ∅ 2 2A | ∅ 2 2C | ∅ 3 3A | ∅ 4 4A | ∅ 5 5A | ∅ 6 6A | ∅ 6 6C | ∅ 7 7A | ∅ 8 8A | ∅ 9 9A | ∅ 10 10A | ∅ 11 11A | ∅ 12 12A |
| FILE "J" | ∅ 1 1A | ∅ 2 2B | ∅ 3 3B | ∅ 4 4B | ∅ 5 5B | ∅ 6 6B | ∅ 7 7B | ∅ 8 8B | ∅ 9 9B | ∅ 10 10B | ∅ 11 11B | ∅ 12 12B | ∅ 13 13B | ∅ 14 14B |

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

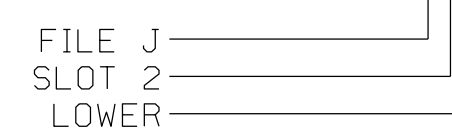
FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE | CALL | EXTEND TIME | DELAY TIME | ADDED INITIAL | DETECTOR TYPE |
|------------------|---------------|-----------------|---------|--------------|------------|------|-------------|------------|---------------|---------------|
| 1A | TB2-1,2 | I1U | 56 | 1 | 1 | YES | | | | S |
| 2A | TB2-5,6 | I2U | 39 | 2 | 2 | YES | | | X | N |
| 2B | TB2-7,8 | I2L | 43 | 12 | 2 | YES | | | X | N |
| 2C | TB2-9,10 | I3U | 63 | 32 | 2 | YES | | | X | N |
| 3A | TB4-5,6 | I5U | 58 | 3 | 3 | YES | | 3 | | S |
| 4A | TB4-9,10 | I6U | 41 | 4 | 4 | YES | | 10 | | S |
| 5A | TB3-1,2 | J1U | 55 | 5 | 5 | YES | | | | S |
| 6A | TB3-5,6 | J2U | 40 | 6 | 6 | YES | | | X | N |
| 6B | TB3-7,8 | J2L | 44 | 16 | 6 | YES | | | X | N |
| 6C | TB3-9,10 | J3U | 64 | 36 | 6 | YES | | | X | N |
| 7A | TB5-5,6 | J5U | 57 | 7 | 7 | YES | | 3 | | S |
| 8A | TB5-9,10 | J6U | 42 | 8 | 8 | YES | | 10 | | S |
| PED PUSH BUTTONS | | | | | | | | | | |
| P41,P42 | TB8-5,6 | I12L | 69 | PED 4 | 4 PED | | | | | |
| P61,P62 | TB8-7,9 | I13U | 68 | PED 6 | 6 PED | | | | | |

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

INPUT FILE POSITION LEGEND: J2L



Electrical Detail - Sheet 1 of 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:



750 N. Greenfield Pkwy, Garner, NC 27529

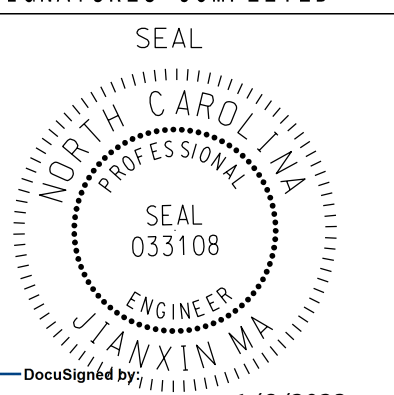
NC 24-87 (Bragg Boulevard) at Elm Street

Division 6 Cumberland County Fayetteville

PLAN DATE: December 2022 REVIEWED BY: J. Ma

PREPARED BY: J. Townsend REVIEWED BY: M.L. Stygles

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



DocuSigned by: J. Ma 1/6/2023

SIG. INVENTORY NO. 06-0033

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0033
 DESIGNED: December 2022
 SEALED: 1/6/2023
 REVISED: N/A



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*****SYTIME*****

