

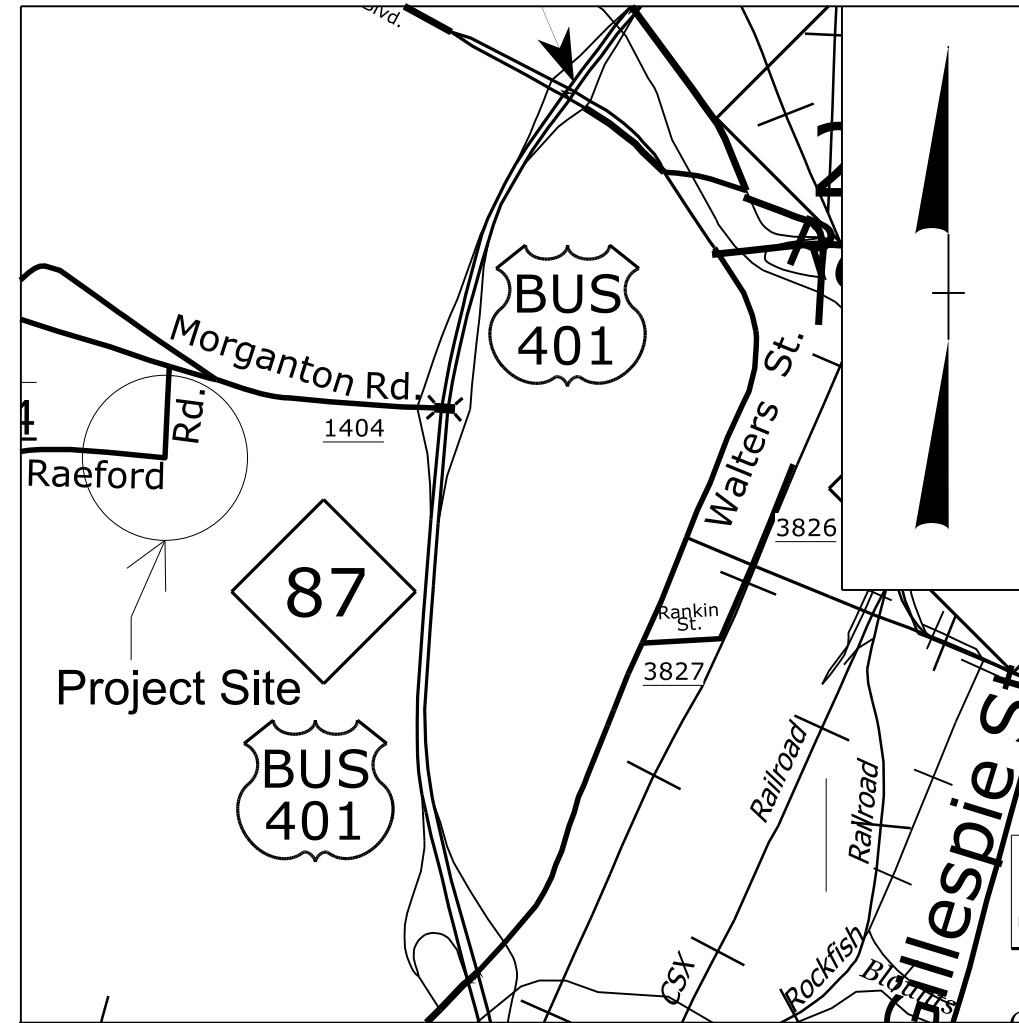
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TIP PROJECT: HS-2006Z

CONTRACT: DF00474



VICINITY MAP (NTS)

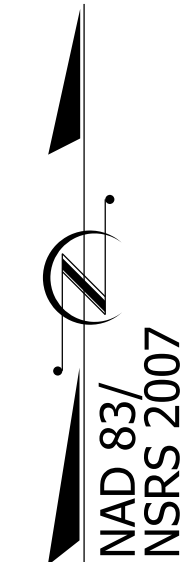
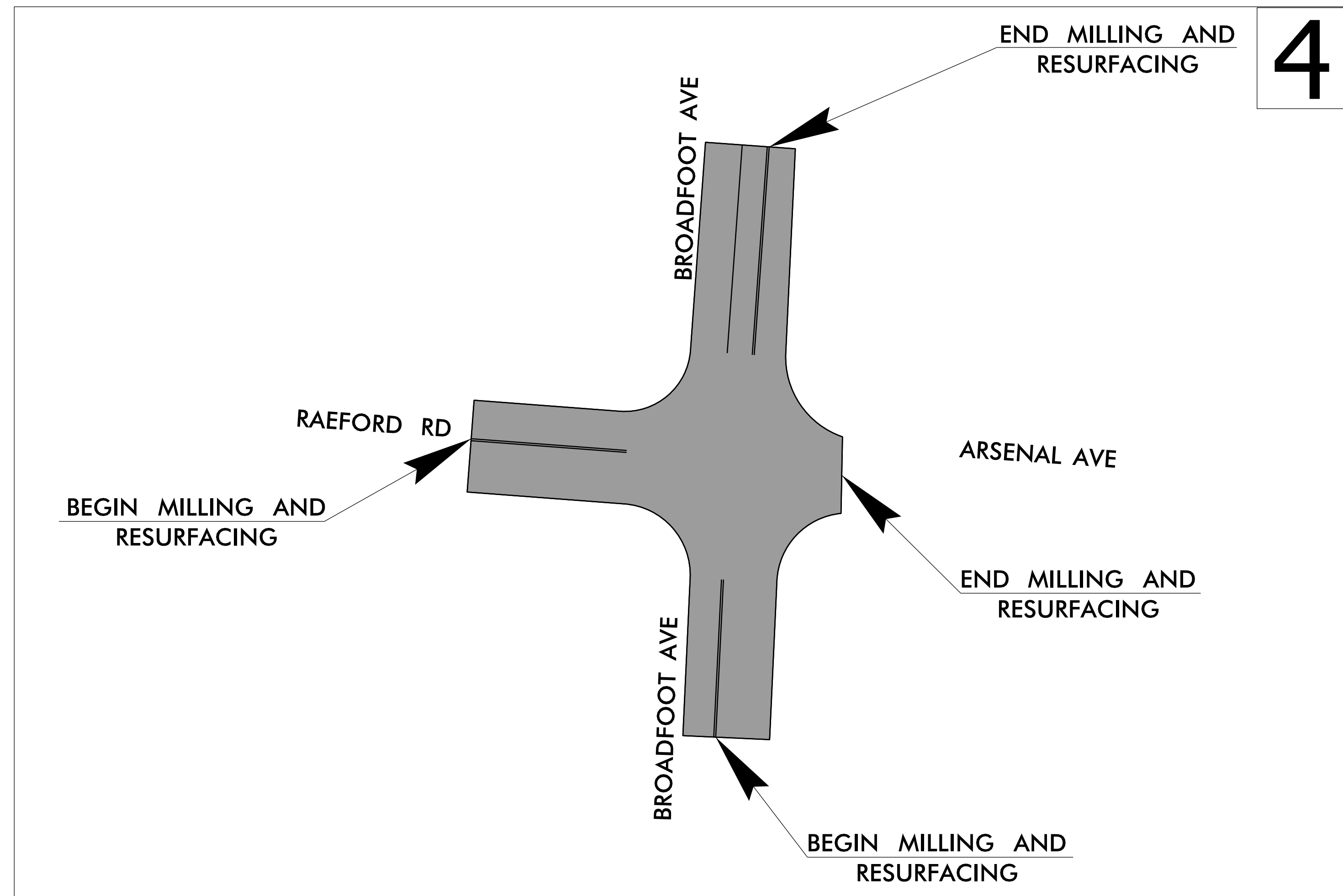
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

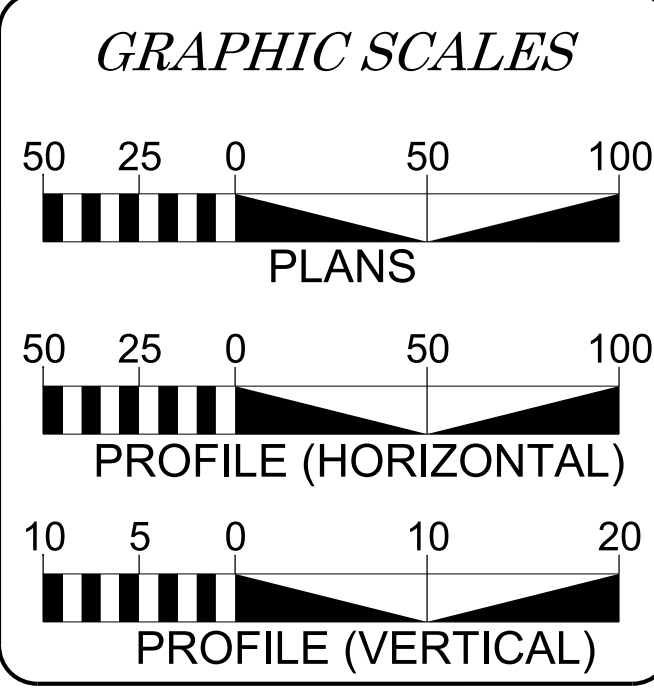
LOCATION: *SR 1414 (RAEFORD ROAD/ARSENAL AVENUE)*
AT SR 1414 (BROADFOOT AVENUE)

TYPE OF WORK: *INSTALL CROSSWALKS WITH PEDESTRIAN SIGNAL HEADS*

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | HS-2006Z | 11 | |
| STATE PROJ. NO. | F. A. PROJ. NO. | DESCRIPTION | |
| 49312.1.30 | 4931204 | PE | |
| 49312.3.30 | 4931204 | CONST. | |
| | | | |
| | | | |
| | | | |
| | | | |



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UNLESS ALL SIGNATURES COMPLETED



PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT HS-2006Z = .027 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
431 Transportation Dr., Fayetteville NC, 28301

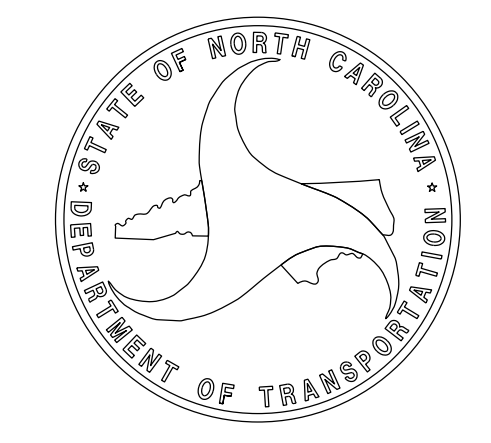
2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE: June 5, 2024

JOHN GAUTHIER
PROJECT ENGINEER

B.K. MATTHEWS
PROJECT DESIGN ENGINEER



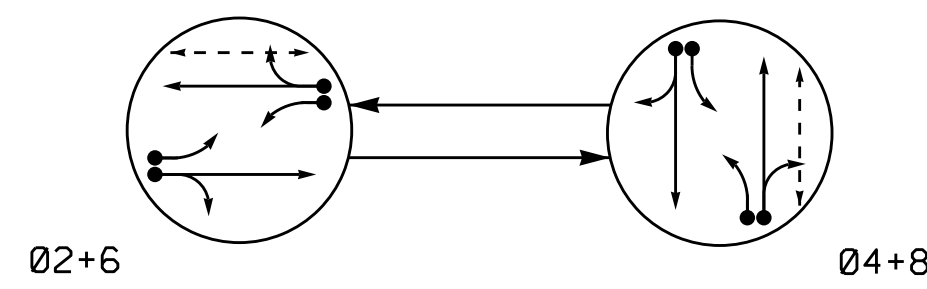
| | |
|--|---------------------|
| PROJECT REFERENCE NO. HS-2006Z | SHEET NO. 04 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

5/14/99
07-MAY-2024 09:47
D:\Projects\HS-2006Z\04-01\06-0002.dgn
R:\Projects\HS-2006Z\04-01\06-0002.dgn



ADJUST CROSSWALK, PEDESTRIAN SIGNAL HEAD AND TYPE II SIGNAL PEDESTAL (P61) TO ACCOMMODATE REPLACING ADA COMPLIANT CURB RAMP IN NW QUADRANT. SEE SHEET SIG. 1.0
 REPLACE ALL EXISTING PAVEMENT MARKINGS AND SYMBOLS IN EXISTING LOCATIONS. SEE SHEET SIG. 1.0 AND 1.1 FOR SIGNAL PLANS.

PHASING DIAGRAM



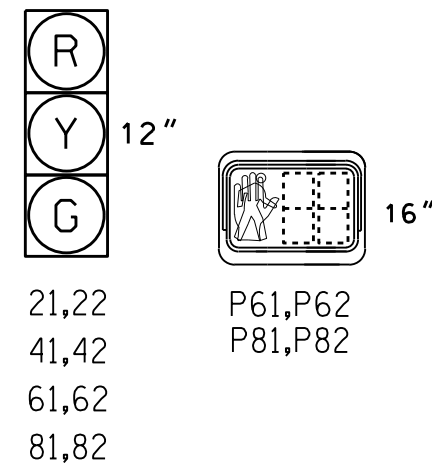
PHASING DIAGRAM DETECTION LEGEND

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

| SIGNAL FACE | PHASE | | |
|-------------|-------|------|---------|
| | Ø2+6 | Ø4+8 | F TOP F |
| 21,22 | G | R | Y |
| 41,42 | R | G | R |
| 61,62 | G | R | Y |
| 81,82 | R | G | R |
| P61,P62 | W | DW | DRK |
| P81,P82 | DW | W | DRK |

SIGNAL FACE I.D.

All Heads L.E.D.

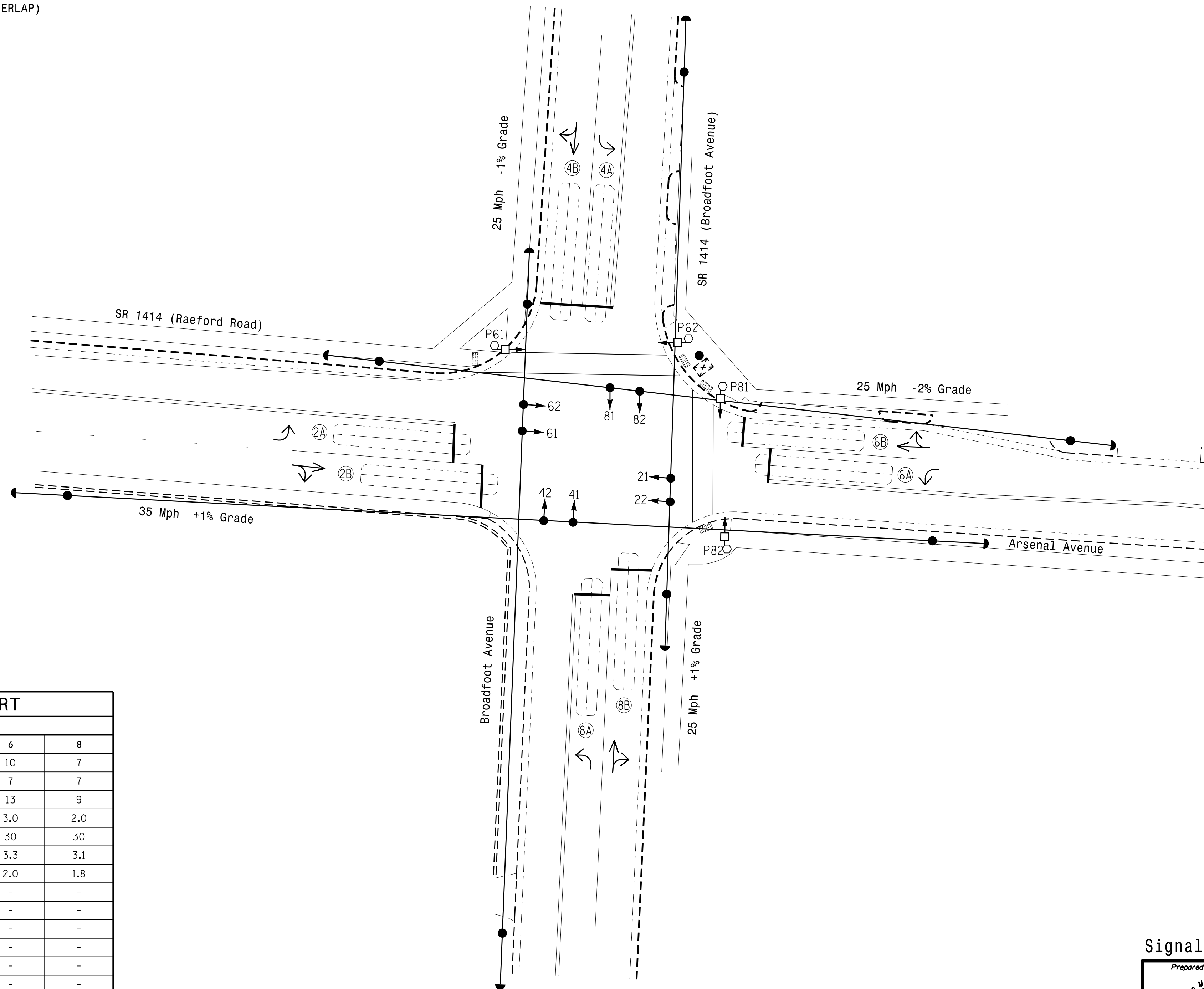


| ASC/3 DETECTOR INSTALLATION CHART | | | | | | | | | | |
|-----------------------------------|-----------|----------------------------|-------|-------------|-------|---------|-------------|------------|------|----------------------|
| DETECTOR | | | | PROGRAMMING | | | | | | |
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTEND TIME | DELAY TIME | TYPE | SYSTEM LOOP NEW CARD |
| 2A,2B | 6X40 | +5 | 2-4-2 | - | 2 | Yes | - | - | N | - |
| 4A,4B | 6X40 | +5 | 2-4-2 | - | 4 | Yes | - | - | N | - |
| 6A | 6X40 | +5 | 2-4-2 | - | 6 | Yes | - | - | N | - |
| 6B | 6X40 | +5 | 2-4-2 | - | 6 | Yes | - | - | N | - |
| 8A,8B | 6X40 | +5 | 2-4-2 | - | 8 | Yes | - | - | N | - |

2 Phase Fully Actuated Fayetteville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pavement markings are existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



| FEATURE | PHASE | | | |
|-------------------------|-------------|-----|-------------|-----|
| | 2 | 4 | 6 | 8 |
| Min Green * | 10 | 7 | 10 | 7 |
| Walk * | - | - | 7 | 7 |
| Ped Clear | - | - | 13 | 9 |
| Veh. Extension * | 3.0 | 2.0 | 3.0 | 2.0 |
| Max I * | 30 | 30 | 30 | 30 |
| Yellow | 3.8 | 3.2 | 3.3 | 3.1 |
| Red Clear | 1.3 | 1.9 | 2.0 | 1.8 |
| Actuations B4 Add * | - | - | - | - |
| Seconds / Actuation * | - | - | - | - |
| Max Initial * | - | - | - | - |
| Time Before Reduction * | - | - | - | - |
| Time To Reduce * | - | - | - | - |
| Minimum Gap | - | - | - | - |
| Locking Detector | X | - | X | - |
| Recall Position | VEH. RECALL | - | VEH. RECALL | - |
| Dual Entry | - | X | - | X |
| Simultaneous Gap | 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 |
|--|---------------------------------------|
| ○ → Traffic Signal Head | ● → Traffic Signal Head |
| ● → Modified Signal Head | N/A |
| — T — Sign | N/A |
| ○ — T — Pedestrian Signal Head With Push Button & Sign | ■ — T — Pedestrian Signal Head |
| ○ — T — Signal Pole with Guy | ● — T — Signal Pole with Guy |
| ○ — T — Signal Pole with Sidewalk Guy | ● — T — Signal Pole with Sidewalk Guy |
| □ Inductive Loop Detector | □ Inductive Loop Detector |
| □ Controller & Cabinet | □ Controller & Cabinet |
| □ Junction Box | □ Junction Box |
| - - - 2-in Underground Conduit | - - - 2-in Underground Conduit |
| N/A Right of Way | - - - Right of Way |
| → Directional Arrow | → Directional Arrow |
| ○ Type II Signal Pedestal | ● Type II Signal Pedestal |

Signal Upgrade

| | |
|---|------------------|
| SR 1414 (Raeford Road) / Arsenal Avenue At SR 1414 (Broadfoot Avenue) | |
| Division 6 Cumberland County Fayetteville | |
| PLAN DATE: January 2024 | REVIEWED BY: BMH |
| PREPARED BY: Jeff Spence | REVIEWED BY: |
| REVISIONS | INIT. DATE |
| | |
| | |

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SEAL

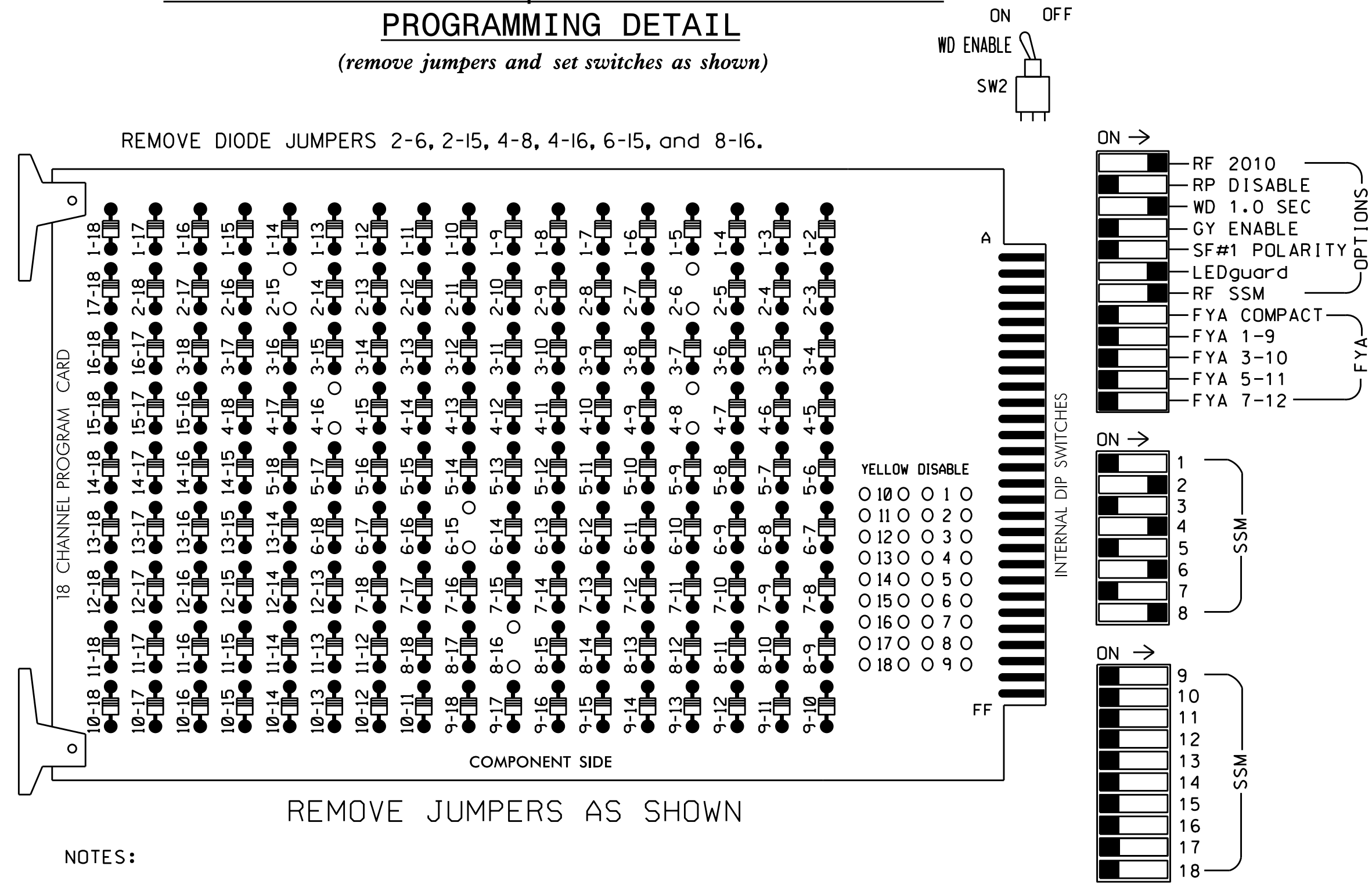
BAILEY M. HARDER

03/14/2024

SIG. INVENTORY NO. 06-0007

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 phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all phases.
- Program controller to start up in phase 2 Green and 6 Green.
- 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.....S2,S5,S8,S9,S11,S12
 PHASES USED.....2,4,6,6PED,8,8PED
 OVERLAPS.....NONE

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 | 8 PED | OLA | OLB | SPARE | OLC | OLD | SPARE |
| SIGNAL HEAD NO. | NU | 21,22 | NU | NU | 41,42 | NU | NU | 61,62 | P61, P62 | NU | 81,82 | P81, P82 | NU | NU | NU | NU | NU | NU |
| RED | | 128 | | | 101 | | | 134 | | | 107 | | | | | | | |
| YELLOW | | 129 | | | 102 | | | 135 | | | 108 | | | | | | | |
| GREEN | | 130 | | | 103 | | | 136 | | | 109 | | | | | | | |
| RED ARROW | | | | | | | | | | | | | | | | | | |
| YELLOW ARROW | | | | | | | | | | | | | | | | | | |
| GREEN ARROW | | | | | | | | | | | | | | | | | | |
| Hand icon | | | | | | | | | 119 | | 110 | | | | | | | |
| Walking person icon | | | | | | | | | 121 | | 112 | | | | | | | |

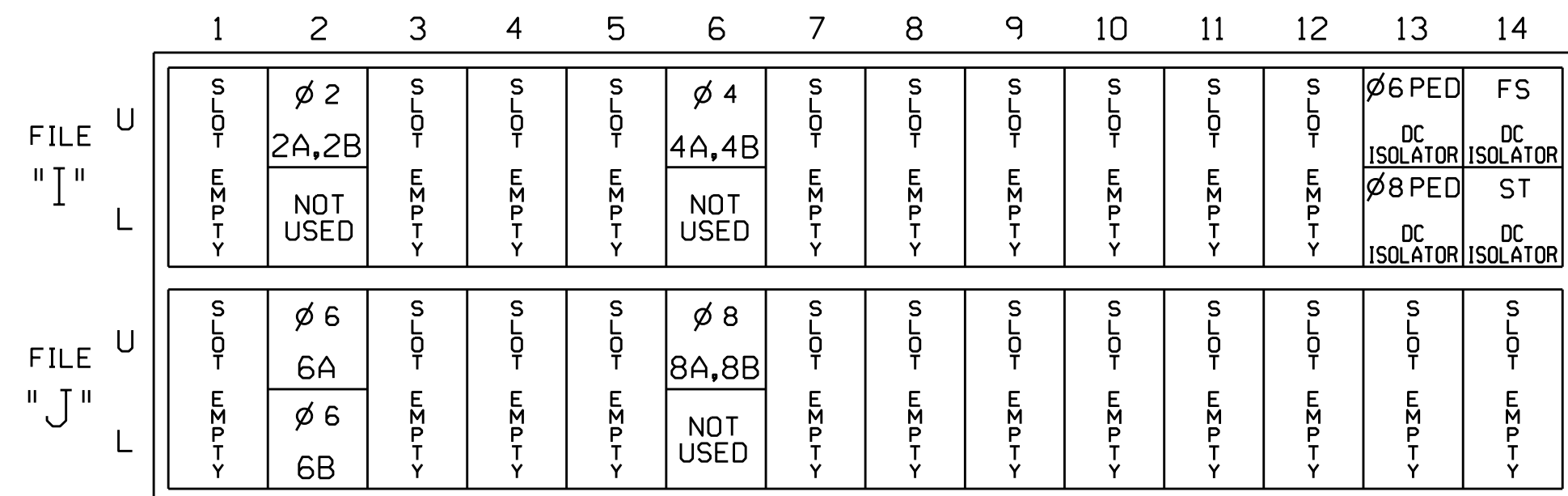
NU = Not Used

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.

INPUT FILE POSITION LAYOUT

(front view)



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

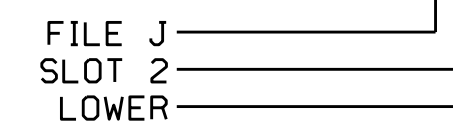
FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | DETECTOR NO. | NEMA PHASE | CALL | EXTEND TIME | DELAY TIME | DETECTOR TYPE |
|------------------|---------------|-----------------|---------|--------------|------------|------|-------------|------------|---------------|
| 2A,2B | TB2-5,6 | I2U | 39 | 2 | 2 | YES | | | N |
| 4A,4B | TB4-9,10 | I6U | 41 | 4 | 4 | YES | | | N |
| 6A | TB3-5,6 | J2U | 40 | 6 | 6 | YES | | | N |
| 6B | TB3-7,8 | J2L | 44 | 16 | 6 | YES | | | N |
| 8A,8B | TB5-9,10 | J6U | 42 | 8 | 8 | YES | | | N |
| PED PUSH BUTTONS | | | | | | | | | |
| P61,P62 | TB8-7,9 | I13U | 68 | PED 6 | 6 PED | | | | |
| P81,P82 | TB8-8,9 | I13L | 70 | PED 8 | 8 PED | | | | |

NOTE:
 INSTALL DC ISOLATOR IN INPUT FILE SLOT 113.

INPUT FILE POSITION LEGEND:



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-007
 DESIGNED: January 2024
 SEALED: 3/14/2024
 REVISED: N/A

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1414 (Raeford Road)/ Arsenal Avenue at SR 1414 (Broadfoot Avenue)

Division 6 Cumberland County Fayetteville

PLAN DATE: March 2024 REVIEWED BY: D.T.J.

PREPARED BY: D.J. Craddock REVIEWED BY:

REVISIONS

INIT. DATE

DocuSigned by: D. Todd Joyce 03/15/2024

9000CADPDR2410 DATE

SIG. INVENTORY NO. 06-0007