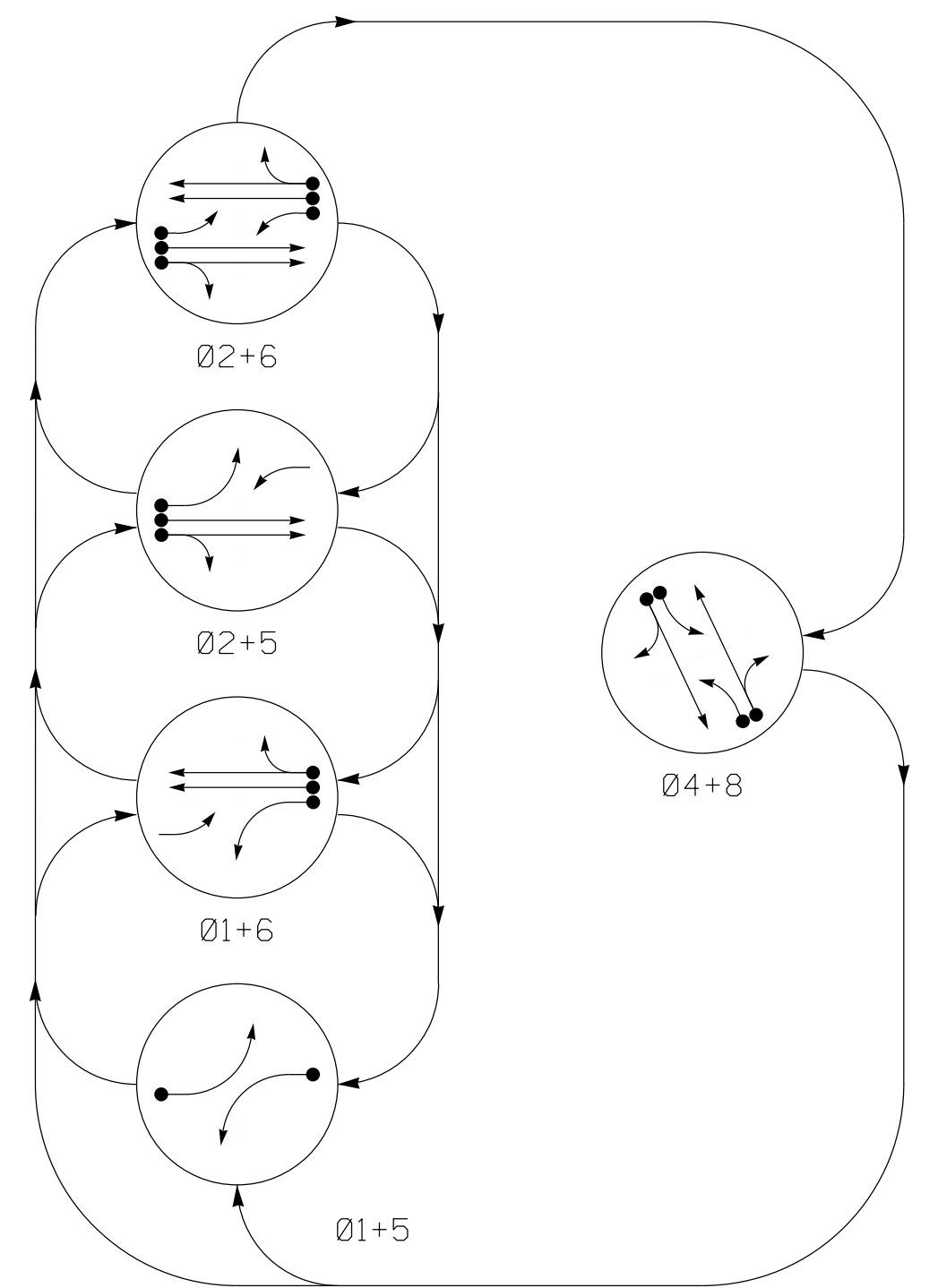


**PHASING DIAGRAM**

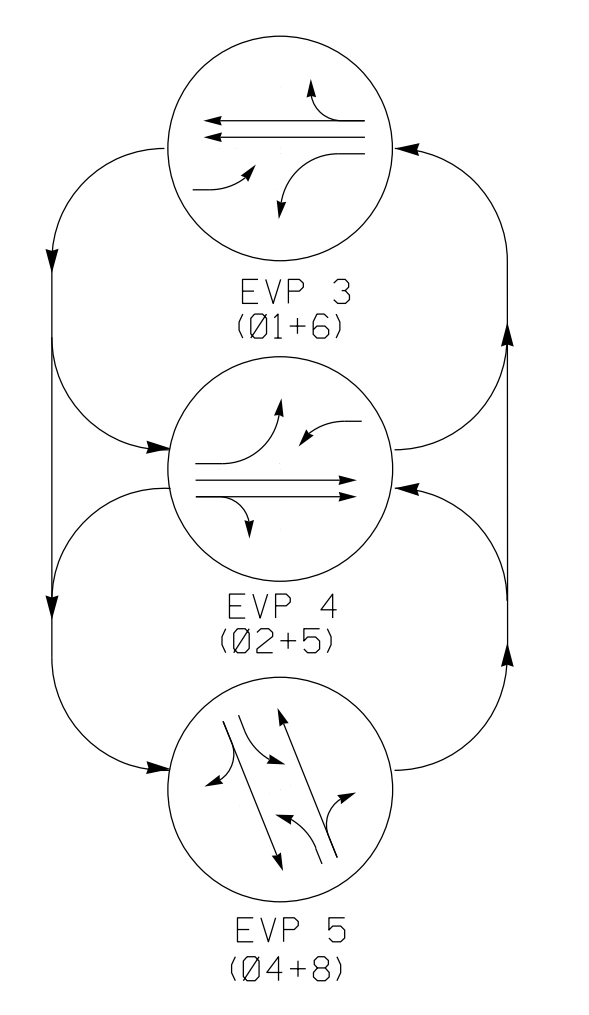


**PHASING DIAGRAM DETECTION LEGEND**

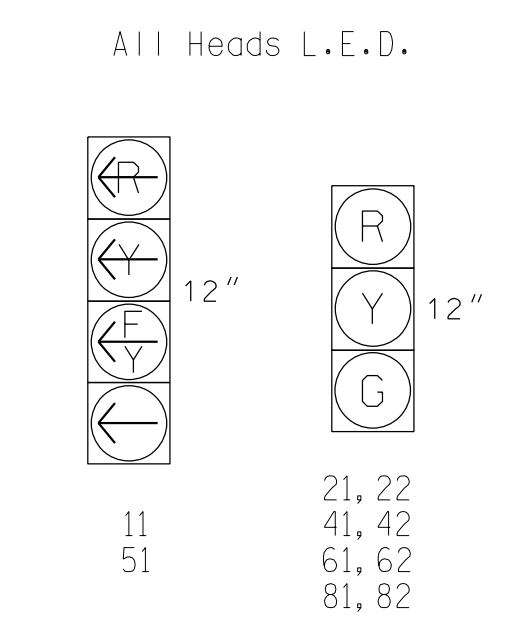
- DETECTED MOVEMENT
- ◄ UNDETECTED MOVEMENT (OVERLAP)
- ◄ UNSIGNALIZED MOVEMENT
- ◄ PEDESTRIAN MOVEMENT

| SIGNAL FACE | PHASE |      |      |      |      |       |       |       |
|-------------|-------|------|------|------|------|-------|-------|-------|
|             | Ø1+5  | Ø1+6 | Ø2+5 | Ø2+6 | Ø4+8 | EVP 3 | EVP 4 | EVP 5 |
| 11          | ←     | ←    | ←    | ←    | ←    | ←     | ←     | ←     |
| 21, 22      | R     | R    | G    | G    | R    | R     | G     | R     |
| 41, 42      | R     | R    | R    | R    | G    | R     | R     | G     |
| 51          | ←     | ←    | ←    | ←    | ←    | ←     | ←     | ←     |
| 61, 62      | R     | G    | R    | G    | R    | G     | R     | R     |
| 81, 82      | R     | R    | R    | R    | G    | R     | R     | R     |

**EV PREEMPT PHASES**



**SIGNAL FACE I.D.**

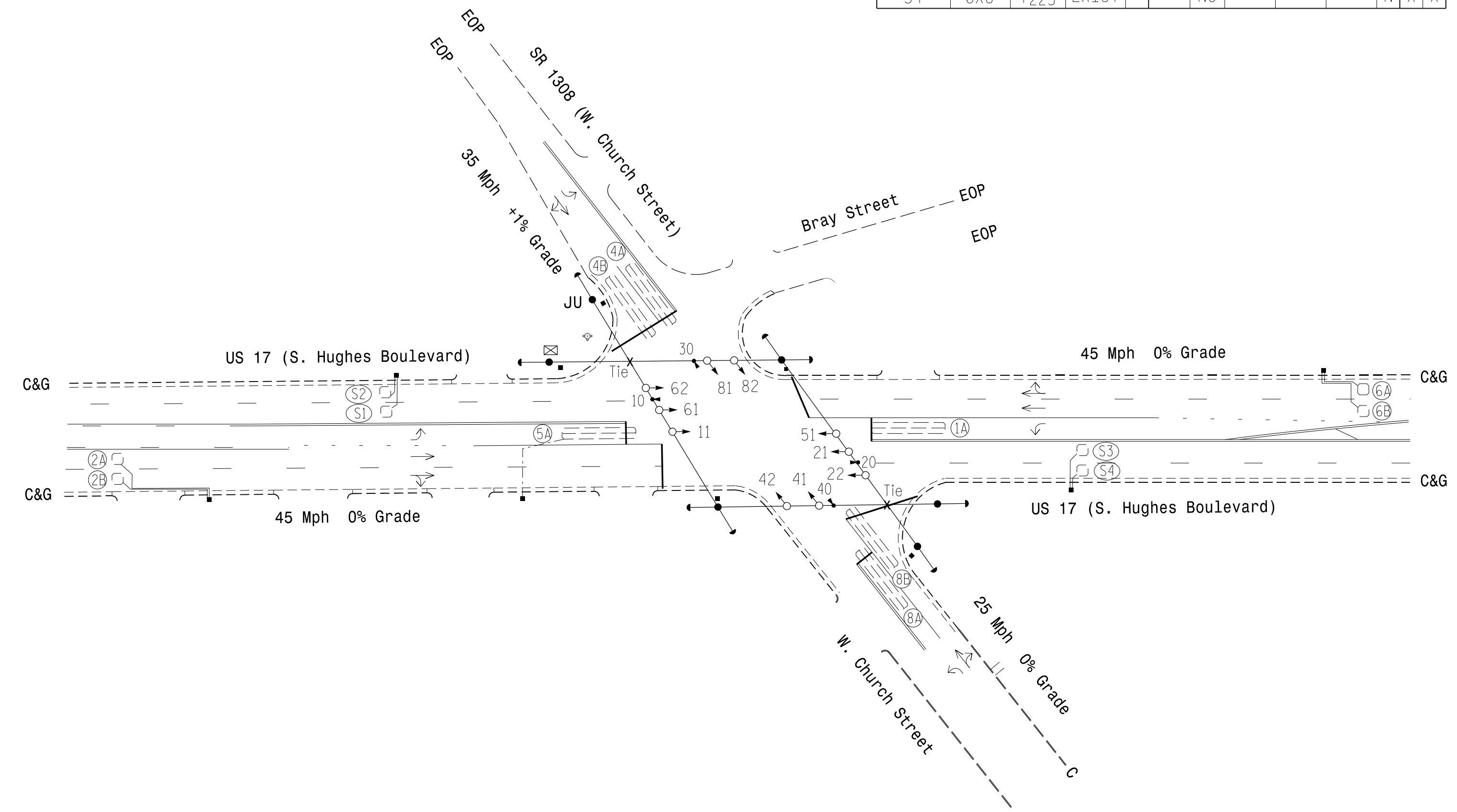


| ASC/3 DETECTOR INSTALLATION CHART |           |                            |       |          |             |         |             |            |                   |      |                      |
|-----------------------------------|-----------|----------------------------|-------|----------|-------------|---------|-------------|------------|-------------------|------|----------------------|
| 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 | -        | 1           | Yes     | -           | 15         | -                 | S    | - X                  |
| 2A                                | 6X6       | 300                        | EXIST | -        | 2           | Yes     | -           | -          | X                 | N    | - X                  |
| 2B                                | 6X6       | 300                        | EXIST | -        | 2           | Yes     | -           | -          | X                 | N    | - X                  |
| 4A                                | 6X40      | +5                         | 2-4-2 | -        | 4           | Yes     | -           | 3          | -                 | S    | - X                  |
| 4B                                | 6X40      | +5                         | 2-4-2 | -        | 4           | Yes     | -           | 10         | -                 | S    | - X                  |
| 5A                                | 6X40      | +5                         | 2-4-2 | -        | 5           | Yes     | -           | 15         | -                 | S    | - X                  |
| 6A                                | 6X6       | 300                        | 5     | X        | 6           | Yes     | -           | -          | X                 | N    | - X                  |
| 6B                                | 6X6       | 300                        | EXIST | -        | 6           | Yes     | -           | -          | X                 | N    | - X                  |
| 8A                                | 6X40      | +5                         | 2-4-2 | -        | 8           | Yes     | -           | -          | -                 | S    | - X                  |
| 8B                                | 6X40      | +5                         | 2-4-2 | -        | 8           | Yes     | -           | 10         | -                 | S    | - X                  |
| S1                                | 6X6       | +225                       | EXIST | -        | -           | No      | -           | -          | -                 | N    | X X                  |
| S2                                | 6X6       | +225                       | EXIST | -        | -           | No      | -           | -          | -                 | N    | X X                  |
| S3                                | 6X6       | +225                       | EXIST | -        | -           | No      | -           | -          | -                 | N    | X X                  |
| S4                                | 6X6       | +225                       | EXIST | -        | -           | No      | -           | -          | -                 | N    | X X                  |

**5 Phase Fully Actuated w/ EV Preemption (Elizabeth City 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.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red
- Pavement markings are existing.
- This intersection features an optical preemption system. Shown location of optical detectors are conceptual only.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Relocate existing optical detection equipment from existing cabinet to new cabinet.
- Optical detector 10 calls EVP 3; Optical detector 20 calls EVP 4; Optical detector 30 calls EVP 5; Optical detector 40 calls EVP 6.
- Raise spans to obtain 17' minimum clearance for signal head heights.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede this values.



**ASC/3 TIMING CHART**

| FEATURE                 | PHASE |             |     |     |             |     |
|-------------------------|-------|-------------|-----|-----|-------------|-----|
|                         | 1     | 2           | 4   | 5   | 6           | 8   |
| Min Green *             | 7     | 12          | 7   | 7   | 12          | 7   |
| Walk *                  | 0     | 0           | 0   | 0   | 0           | 0   |
| Ped Clear               | 0     | 0           | 0   | 0   | 0           | 0   |
| Veh. Extension *        | 2.0   | 6.0         | 2.0 | 2.0 | 6.0         | 2.0 |
| Max I *                 | 30    | 90          | 30  | 30  | 90          | 30  |
| Yellow                  | 3.0   | 4.5         | 3.8 | 3.0 | 4.5         | 3.2 |
| Red Clear               | 2.8   | 1.6         | 2.2 | 3.1 | 1.6         | 3.2 |
| Actions 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              | -     | -           | X   | -   | -           | X   |
| Simultaneous Gap        | X     | X           | X   | X   | X           | X   |

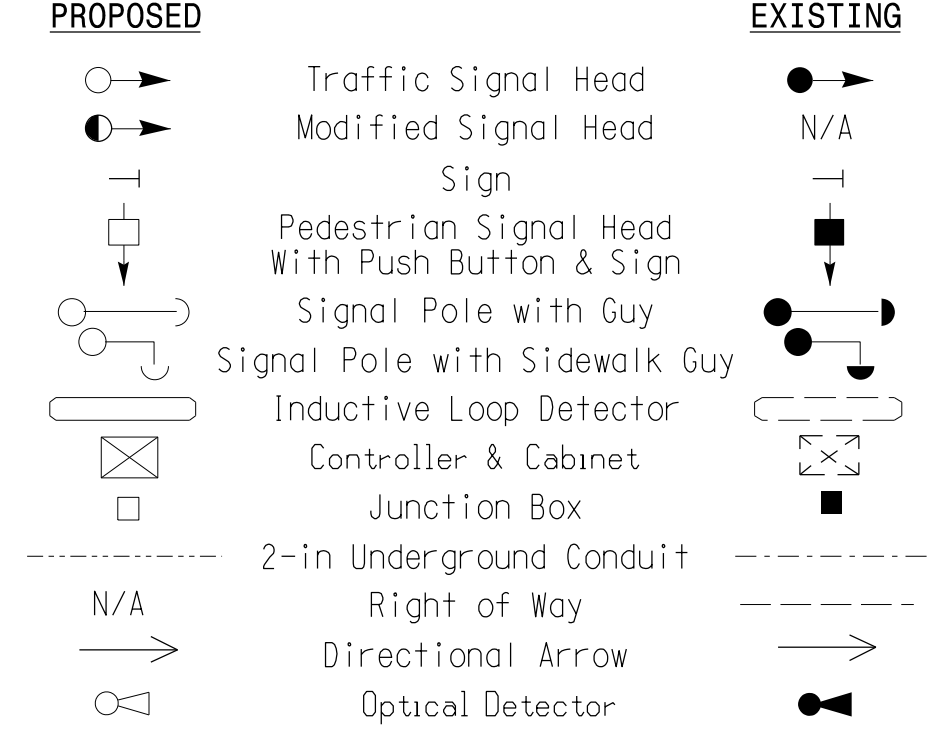
\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

**ASC/3 EV PREEMPT**

| FUNCTION                     | PRE 3 | PRE 4 | PRE 5 |
|------------------------------|-------|-------|-------|
| Exit Phase(s)                | 2,6   | 2,6   | 2,6   |
| Preempt Override             | OFF   | OFF   | OFF   |
| Delay Time                   | 0     | 0     | 0     |
| Ped Clear Through Yellow     | N     | N     | N     |
| Terminate Phases             | N     | N     | N     |
| Entrance Walk                | 255*  | 255*  | 255*  |
| Entrance Ped Clear           | 255*  | 255*  | 255*  |
| Entrance Min Green           | 1     | 1     | 1     |
| Entrance Yellow Change       | 25.5* | 25.5* | 25.5* |
| Entrance Red Clear           | 25.5* | 25.5* | 25.5* |
| Minimum Dwell Time           | 7     | 7     | 7     |
| Preempt Input Extension Time | 2     | 2     | 2     |
| Preempt Max Time             | 120   | 120   | 120   |
| Exit Yellow Change           | 25.5* | 25.5* | 25.5* |
| Exit Red Clear               | 25.5* | 25.5* | 25.5* |

\* Allows normal phase times to be used.

**LEGEND**



**Signal Upgrade**

Prepared for the Offices of:  
 Transportation, Mobility and Signal Division  
 DEPARTMENT OF NORTH CAROLINA  
 STREET OF EXCELLENCE  
 Signal Design Section

US 17 (S. Hughes Blvd.) at SR 1308 (W. Church St.)

Divison 1 Pasquotank County Elizabeth City  
 PLAN DATE: February 2018 REVIEWED BY: AJ Davis  
 PREPARED BY: JA Le REVIEWED BY: LM Moon

REVISIONS: INIT. DATE

Seal: LISA M. MOON, ENGINEER, SEAL 022516

8/21/2018

SIG. INVENTORY NO. 01-0016

