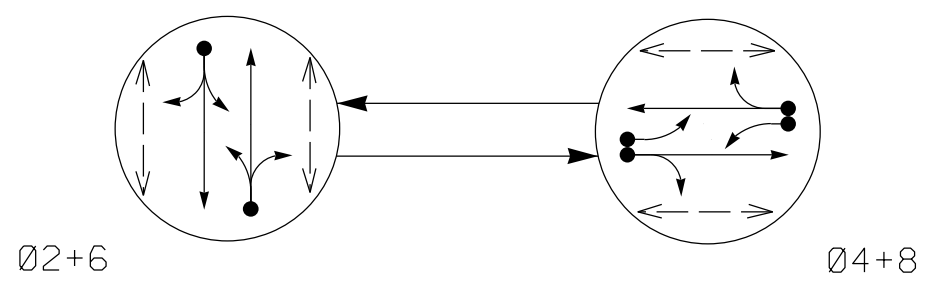
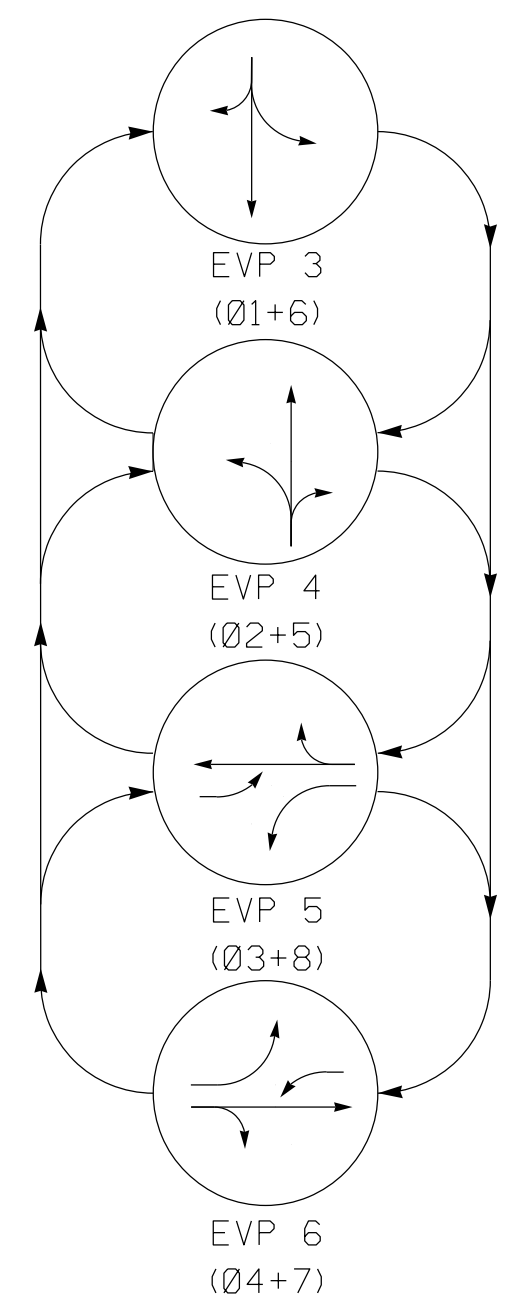


PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND
 ● DETECTED MOVEMENT
 ○ UNDETECTED MOVEMENT (OVERLAP)
 ○ UNSIGNALIZED MOVEMENT
 ○ PEDESTRIAN MOVEMENT

EV PREEMPT PHASES



SIGNAL FACE I.D.

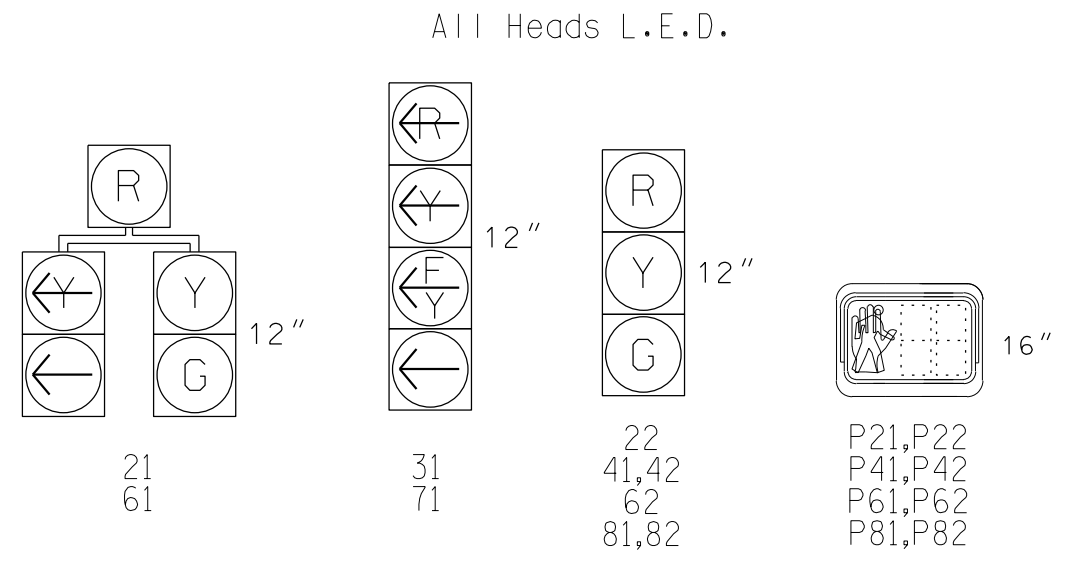


TABLE OF OPERATION

| SIGNAL FACE | PHASE | | | | | | |
|-------------|-------|------|-------|-------|-------|-------|-----|
| | 02+6 | 04+8 | EVP 3 | EVP 4 | EVP 5 | EVP 6 | F |
| 21 | G | R | R | G | R | R | Y |
| 22 | G | R | R | G | R | R | Y |
| 31 | R | G | R | R | R | R | Y |
| 41, 42 | R | G | R | R | R | R | Y |
| 61 | R | R | G | R | R | R | Y |
| 62 | G | R | G | R | R | R | Y |
| 71 | R | G | R | R | R | R | Y |
| 81, 82 | R | G | R | R | G | R | R |
| P21, P22 | W | DW | DW | DW | DW | DW | DRK |
| P41, P42 | DW | W | DW | DW | DW | DW | DRK |
| P61, P62 | W | DW | DW | DW | DW | DW | DRK |
| P81, P82 | DW | W | DW | DW | DW | DW | DRK |

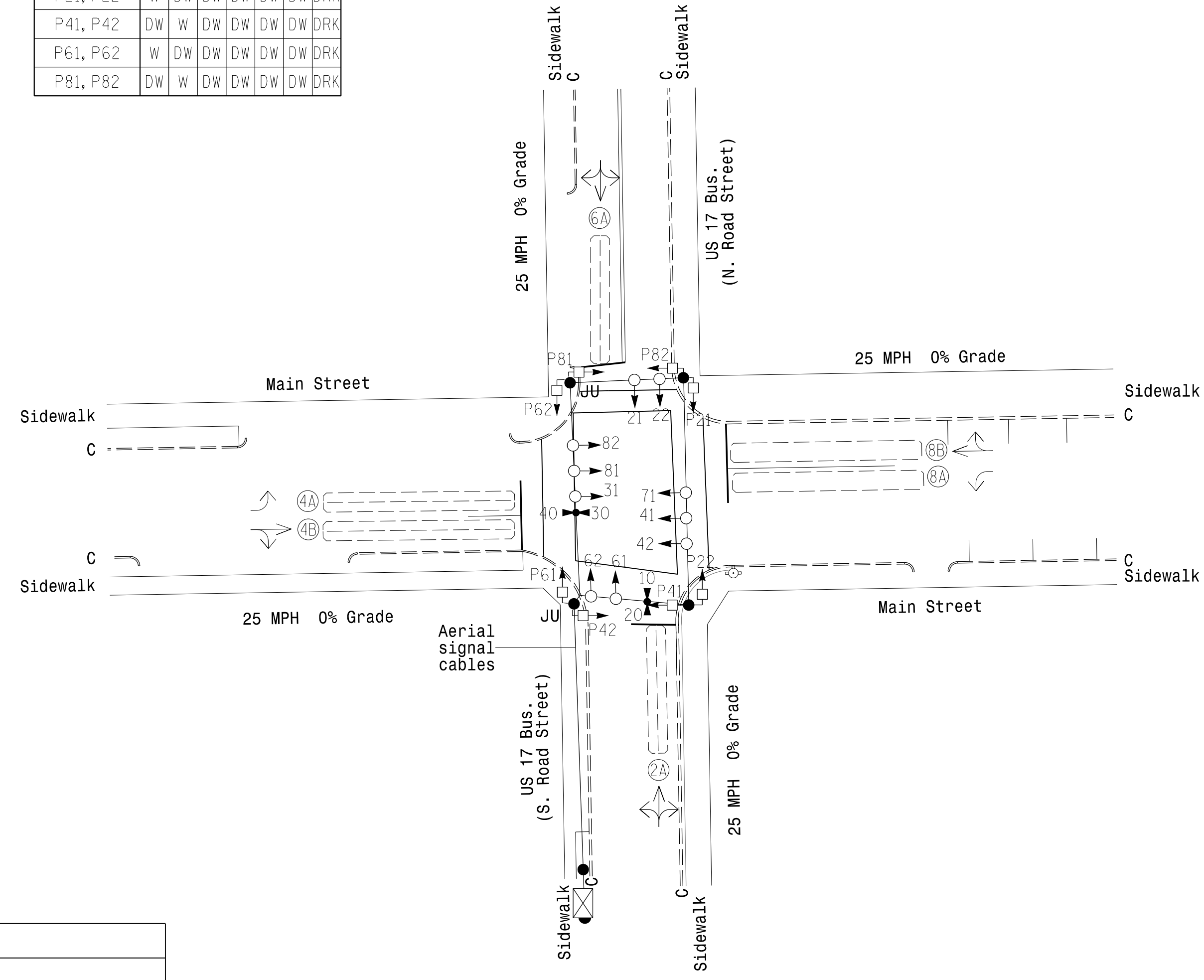
ASC/3 DETECTOR INSTALLATION CHART

| 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 |
| 2A | 6X40 | 0 | 2-4-2 | - | 2 | Yes | - | - | - | S | - | X |
| 4A | 6X60 | 0 | EXIST | - | 4 | Yes | - | 3 | - | S | - | X |
| 4B | 6X60 | 0 | EXIST | - | 4 | Yes | - | 10 | - | S | - | X |
| 6A | 6X40 | 0 | 2-4-2 | - | 6 | Yes | - | - | - | S | - | X |
| 8A | 6X60 | 0 | EXIST | - | 8 | Yes | - | 3 | - | S | - | X |
| 8B | 6X60 | 0 | EXIST | - | 8 | Yes | - | 10 | - | S | - | X |

2 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.
- 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.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- Relocate existing optical preemption system to integrate into new cabinet and signal installation.
- Optical detector 10 calls EVP 3. Optical detector 20 calls EVP 4. Optical detector 30 calls EVP 5. Optical detector 40 calls EVP 6.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



LEGEND

| PROPOSED | EXISTING |
|--|--|
| ○ Traffic Signal Head | ● Traffic Signal Head |
| ○ Modified Signal Head | N/A |
| ○ Sign | ○ Sign |
| ○ Pedestrian Signal Head with Push Button & Sign | ○ Pedestrian Signal Head with Push Button & Sign |
| ○ Signal Pole with Guy | ○ Signal Pole with Guy |
| ○ Signal Pole with Sidewalk Guy | ○ 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 |
| ○ Right of Way | ○ Right of Way |
| ○ Directional Arrow | ○ Directional Arrow |
| ○ Fire Hydrant | ○ Fire Hydrant |
| ○ Optical Detector | ○ Optical Detector |

ASC/3 TIMING CHART

| FEATURE | PHASE | | | | | | | |
|-------------------------|-------|-------------|-----|-----|-----|-------------|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Min Green * | 7 | 10 | - | 7 | - | 10 | - | 7 |
| Delayed Green * | - | - | - | 7 | - | - | - | 7 |
| Walk * | - | 7 | - | 7 | - | 7 | - | 7 |
| Ped Clear | - | 12 | - | 7 | - | 10 | - | 7 |
| Veh. Extension * | - | 1.0 | - | 1.0 | - | 2.0 | - | 1.0 |
| Max 1 * | - | 30 | - | 25 | - | 30 | - | 25 |
| Yellow | 3.0 | 3.2 | 3.0 | 3.2 | 3.0 | 3.2 | 3.0 | 3.2 |
| Red Clear | 1.8 | 2.0 | 1.6 | 1.6 | 1.9 | 1.8 | 1.8 | 1.6 |
| Actuations B4 Add * | - | - | - | - | - | - | - | - |
| Seconds / Actuation * | - | - | - | - | - | - | - | - |
| Max Initial * | - | - | - | - | - | - | - | - |
| Time Before Reduction * | - | - | - | - | - | - | - | - |
| Time To Reduce * | - | - | - | - | - | - | - | - |
| Minimum Gap | - | - | - | - | - | - | - | - |
| Locking Detector | - | - | - | - | - | - | - | - |
| Recall Position | - | VEH. RECALL | - | - | - | VEH. RECALL | - | - |
| Dual Entry | - | - | - | X | - | - | - | X |
| Simultaneous Gap | X | X | - | X | X | X | - | X |

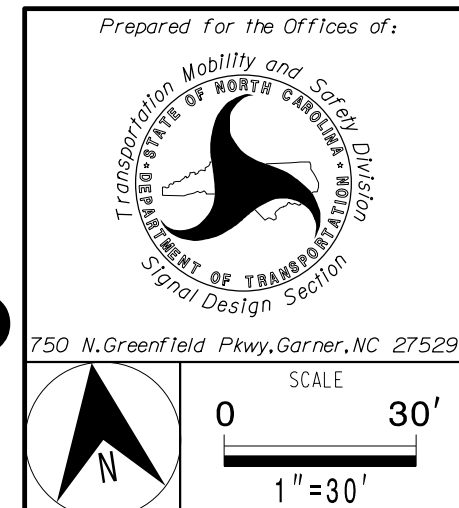
* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

ASC/3 EV PREEMPT

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

* Allows normal phase times to be used.

Signal Upgrade



US 17 Bus. (Road Street) at Main Street
 Division 1 Pasquotank County Elizabeth City
 PLAN DATE: February 2018 REVIEWED BY: AJ Davis
 PREPARED BY: JA Le REVIEWED BY: LM Moon

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
 PROFESSIONAL ENGINEER
 LISA M. MOON
 9/20/2018
 SIG. INVENTORY NO. 01-0005