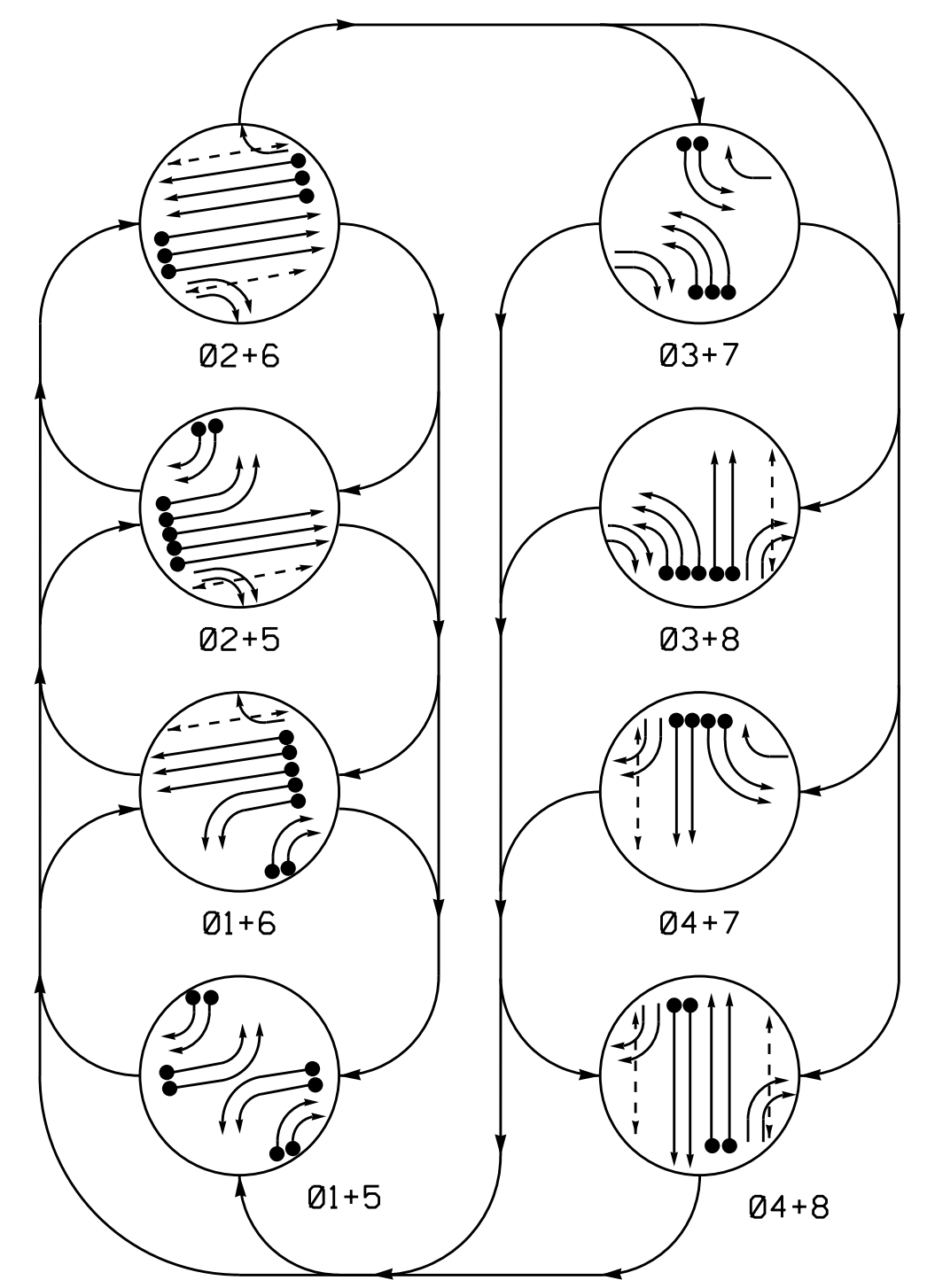


PHASING DIAGRAM



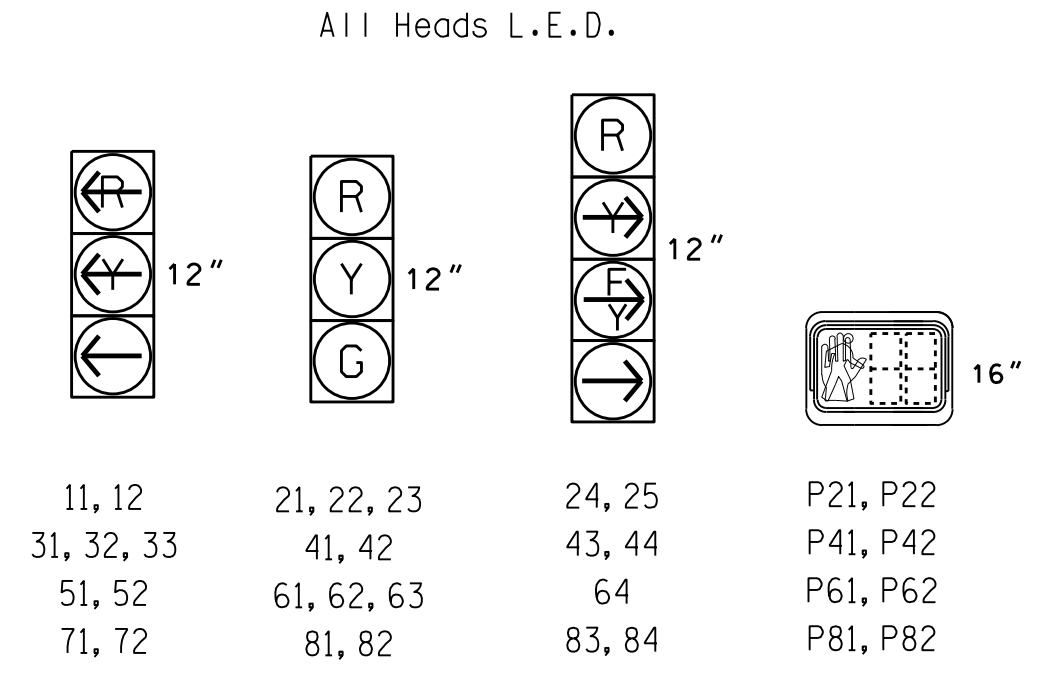
PHASING DIAGRAM DETECTION LEGEND

- 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 |
| 11,12 | — | — | — | — | — | — | — | — |
| 21,22,23 | R | R | G | G | R | R | R | Y |
| 24,25 | R | R | Y | Y | — | — | R | Y |
| 31,32,33 | — | — | — | — | — | — | — | — |
| 41,42 | R | R | R | R | R | R | G | G |
| 43,44 | — | — | — | — | R | R | Y | Y |
| 51,52 | — | — | — | — | — | — | — | — |
| 61,62,63 | R | G | R | G | R | R | R | Y |
| 64 | R | Y | R | Y | — | — | R | Y |
| 71,72 | — | — | — | — | — | — | — | — |
| 81,82 | R | R | R | R | R | G | R | G |
| 83,84 | — | — | — | — | R | R | Y | Y |
| P21,P22 | DW | DW | W | W | DW | DW | W | DRK |
| P41,P42 | DW | DW | DW | DW | DW | DW | W | DRK |
| P61,P62 | DW | W | DW | W | DW | DW | DW | DRK |
| P81,P82 | DW | DW | DW | DW | DW | W | DW | DRK |

SIGNAL FACE I.D.



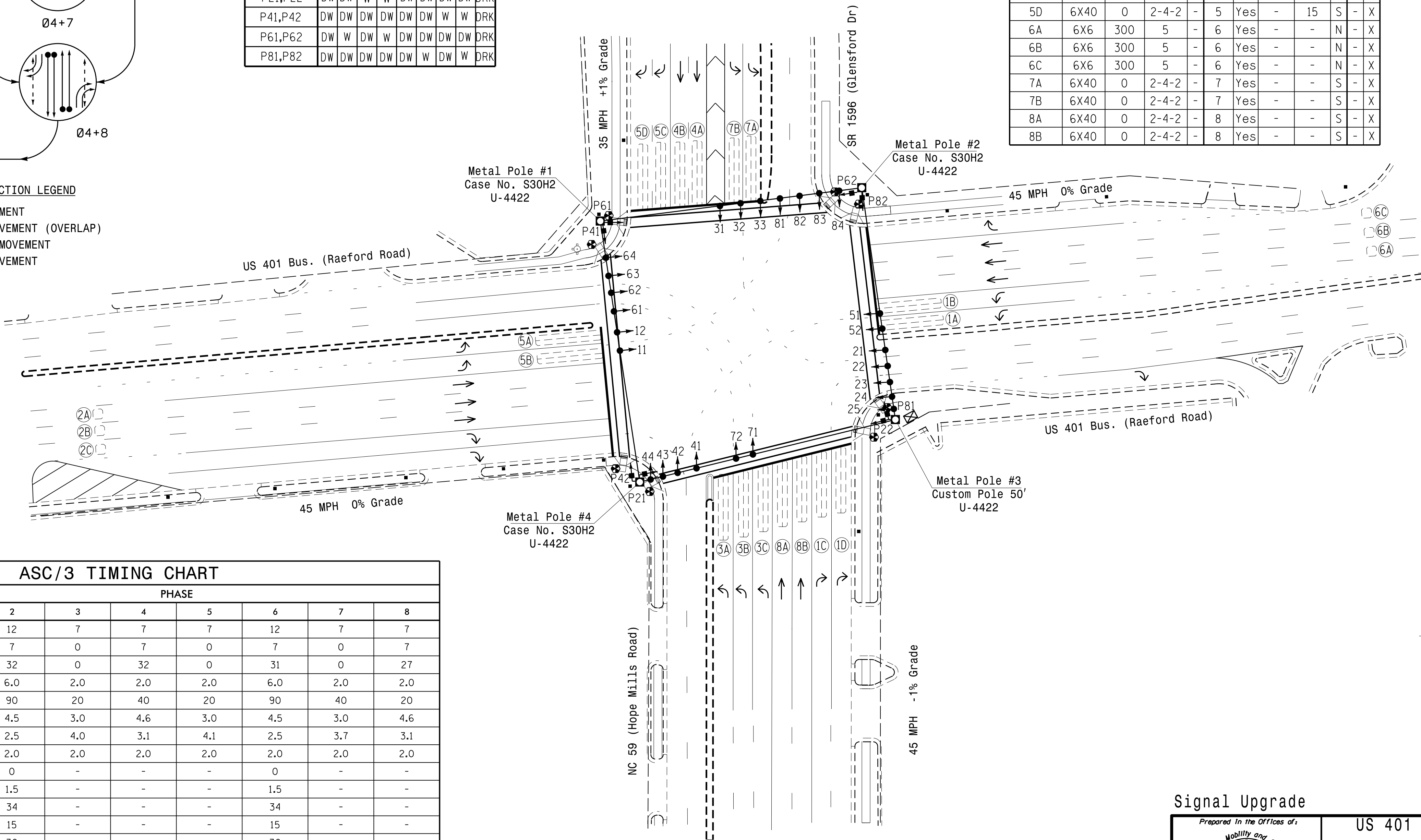
ASC/3 DETECTOR INSTALLATION CHART

| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PROGRAMMING | | | | | | |
|------|-----------|----------------------------|-------|----------|-------------|---------|-------------|------------|------|-------------|---|
| | | | | | PHASE | CALLING | EXTEND TIME | DELAY TIME | TYPE | SYSTEM LOOP | |
| 1A | 6X40 | 0 | 2-4-2 | - | 1 | Yes | - | - | S | - | X |
| 1B | 6X40 | 0 | 2-4-2 | - | 1 | Yes | - | - | S | - | X |
| 1C | 6X40 | 0 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| 1D | 6X40 | 0 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| 2A | 6X6 | 300 | 5 | - | 2 | Yes | - | - | N | - | X |
| 2B | 6X6 | 300 | 5 | - | 2 | Yes | - | - | N | - | X |
| 2C | 6X6 | 300 | 5 | - | 2 | Yes | - | - | N | - | X |
| 3A | 6X40 | 0 | 2-4-2 | - | 3 | Yes | - | 3 | S | - | X |
| 3B | 6X40 | 0 | 2-4-2 | - | 3 | Yes | - | - | S | - | X |
| 3C | 6X40 | 0 | 2-4-2 | - | 3 | Yes | - | - | S | - | X |
| 4A | 6X40 | 0 | 2-4-2 | - | 4 | Yes | - | - | S | - | X |
| 4B | 6X40 | 0 | 2-4-2 | - | 4 | Yes | - | - | S | - | X |
| 5A | 6X40 | 0 | 2-4-2 | - | 5 | Yes | - | - | S | - | X |
| 5B | 6X40 | 0 | 2-4-2 | - | 5 | Yes | - | - | S | - | X |
| 5C | 6X40 | 0 | 2-4-2 | - | 5 | Yes | - | 15 | S | - | X |
| 5D | 6X40 | 0 | 2-4-2 | - | 5 | Yes | - | 15 | S | - | X |
| 6A | 6X6 | 300 | 5 | - | 6 | Yes | - | - | N | - | X |
| 6B | 6X6 | 300 | 5 | - | 6 | Yes | - | - | N | - | X |
| 6C | 6X6 | 300 | 5 | - | 6 | Yes | - | - | N | - | X |
| 7A | 6X40 | 0 | 2-4-2 | - | 7 | Yes | - | - | S | - | X |
| 7B | 6X40 | 0 | 2-4-2 | - | 7 | Yes | - | - | S | - | X |
| 8A | 6X40 | 0 | 2-4-2 | - | 8 | Yes | - | - | S | - | X |
| 8B | 6X40 | 0 | 2-4-2 | - | 8 | Yes | - | - | S | - | X |

8 Phase Fully Actuated Fayetteville Signal System

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
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. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Pavement markings are existing.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



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 | 7 |
| Ped Clear | 0 | 32 | 0 | 32 | 0 | 31 | 0 | 27 |
| Veh. Extension * | 2.0 | 6.0 | 2.0 | 2.0 | 2.0 | 6.0 | 2.0 | 2.0 |
| Max I * | 20 | 90 | 20 | 40 | 20 | 90 | 40 | 20 |
| Yellow | 3.0 | 4.5 | 3.0 | 4.6 | 3.0 | 4.5 | 3.0 | 4.6 |
| Red Clear | 4.2 | 2.5 | 4.0 | 3.1 | 4.1 | 2.5 | 3.7 | 3.1 |
| 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 * | - | 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 | 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 | ● | N/A |
| ○ | Modified Signal Head | ● | N/A |
| ○ | Sign | ○ | Sign |
| ○ | Pedestrian Signal Head | ○ | Pedestrian Signal Head |
| ○ | With Push Button & Sign | ○ | 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 |
| N/A | Right of Way | ○ | Right of Way |
| ○ | Directional Arrow | ○ | Directional Arrow |
| ○ | Type I Pushbutton Post | ○ | Type I Pushbutton Post |
| N/A | Fire Hydrant | ○ | Fire Hydrant |

Signal Upgrade

Prepared In the Offices of:

US 401 Bus (Raeford Road) at NC 59 (Hope Mills Road) / SR 1596 (Glensford Drive)

Division 6 Cumberland County Fayetteville

PLAN DATE: January 2016 REVIEWED BY: PLA

PREPARED BY: Jeff Spence REVIEWED BY:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 40 1"=40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

PROFESSIONAL ENGINEER

SEAL 029904

ENGINEER

PLA

8/29/2016

SIG. INVENTORY NO. 06-0155

09-10-2016 08:51
 S:\TSS\15\Sig\Signal\Section\Eastern Region\01\U-5742 Fayetteville ASC\3\66-0155\60155_s1a.dsn_2016mmds.dgn
 T:\spence