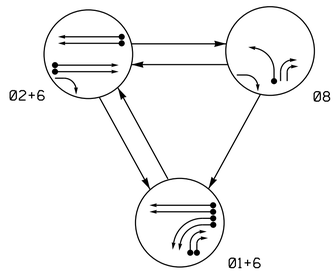
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-5742 | Sig. 27.0 |

3 Phase
Fully Actuated
w/Railroad Preemption
Fayetteville Signal System

## PHASING DIAGRAM

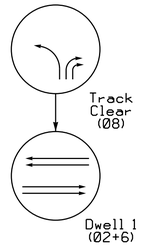



PHASING DIAGRAM DETECTION LEGEND

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

## RAIL PREEMPT PHASES

(High Priority)



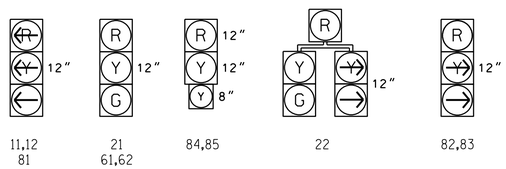

## TABLE OF OPERATION

| SIGNAL FACE | PHASE Ø1+6 | Ø2+6 | Ø8 | Track Clear | Dwell 1 | FLASH |
|---|---|---|---|---|---|---|
| 11, 12 | ← | R | R | R | R | R |
| 21 | R | G | R | R | G | Y |
| 22 | R | G | R | R | R | Y |
| 61, 62 | G | G | R | R | G | Y |
| 81 | R | R | ← | ← | R | R |
| 82,83 | → | R | → | → | R | R |
| 84,85 | •Y | •Y | •Y | R | R | R |
| Sign C | OFF | OFF | OFF | ON | ON | •• |

• 8" Flashing Yellow (See Note 9)
•• See Note 8

## SIGNAL FACE I.D.

All Heads L.E.D.

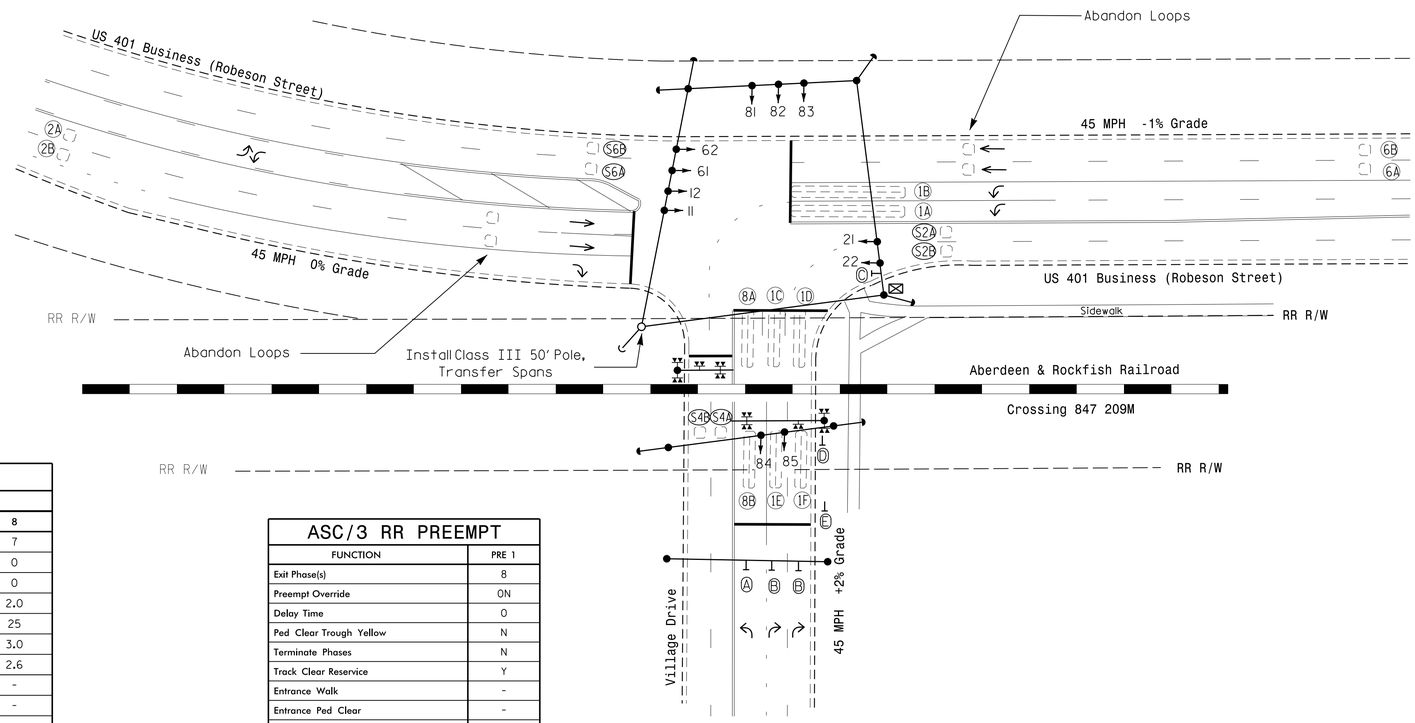



## ASC/3 DETECTOR INSTALLATION CHART

| DETECTOR | | | | | PROGRAMMING | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTEND TIME | DELAY TIME | TYPE | SYSTEM LOOP | NEW CARD |
| 1A | 6X60 | 0 | 2-4-2 | - | 1 | Yes | - | - | S | - | X |
| 1B | 6X60 | 0 | 2-4-2 | - | 1 | Yes | - | - | S | - | X |
| 1C | 6X30 | 0 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| 1D | 6X30 | 0 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| 1E | 6X30 | 60 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| 1F | 6X30 | 60 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| 2A,2B | 6X6 | 300 | 5 | - | 2 | Yes | - | - | N | - | X |
| 6A,6B | 6X6 | 300 | 5 | - | 6 | Yes | - | - | N | - | X |
| 8A | 6X30 | 0 | 2-4-2 | - | 8 | Yes | - | 3 | S | - | X |
| 8B | 6X30 | 60 | 2-4-2 | - | 8 | Yes | - | 10 | S | - | X |
| S2A | 6X6 | EXISTING | 4 | - | - | NO | - | - | N | X | X |
| S2B | 6X6 | EXISTING | 4 | - | - | NO | - | - | N | X | X |
| S4A | 6X6 | EXISTING | 4 | - | - | NO | - | - | N | X | X |
| S4B | 6X6 | EXISTING | 4 | - | - | NO | - | - | N | X | X |
| S6A | 6X6 | EXISTING | 4 | - | - | NO | - | - | N | X | X |
| S6B | 6X6 | EXISTING | 4 | - | - | NO | - | - | N | X | X |

## NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
3. Phase 1 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. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Pavement markings are existing.
8. Ensure flashing operation does not alter operation of blankout signs.
9. Clear signal heads 84 and 85 from flashing 8" yellow to steady 12" yellow during Track Clear and steady red during Dwell 1.
10. 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 | |
| | Modified Signal Head | N/A |
| | Sign | |
| | Pedestrian Signal Head With Push Button & Sign | |
| | Signal Pole with Guy | |
| | Signal Pole with Sidewalk Guy | |
| | Inductive Loop Detector | |
| | Controller & Cabinet | |
| | Junction Box | |
| | 2-in Underground Conduit | |
| N/A | Right of Way | |
| | Directional Arrow | |
| N/A | Railroad Tracks | |
| N/A | Railroad Cantilever | |
| N/A | Fence | |
| Ⓐ | Left Arrow "ONLY" Sign (R3-5L) | Ⓐ |
| Ⓑ | Right Arrow "ONLY" Sign (R3-5R) | Ⓑ |
| Ⓒ | "NO RIGHT TURN - TRAIN" L.E.D. Blankout Sign | Ⓒ |
| Ⓓ | "DO NOT STOP ON TRACKS" Sign (R8-8) | Ⓓ |
| Ⓔ | "STOP HERE ON RED" Sign (R10-6) | Ⓔ |
| Ⓕ | "STOP" Sign (R1-1) | Ⓕ |

## ASC/3 TIMING CHART

| FEATURE | PHASE 1 | 2 | 6 | 8 |
|---|---|---|---|---|
| Min Green * | 7 | 12 | 12 | 7 |
| Walk * | 0 | 0 | 0 | 0 |
| Ped Clear | 0 | 0 | 0 | 0 |
| Veh. Extension * | 2.0 | 6.0 | 6.0 | 2.0 |
| Max 1 * | 35 | 60 | 60 | 25 |
| Yellow | 3.0 | 4.6 | 4.6 | 3.0 |
| Red Clear | 2.4 | 1.5 | 1.5 | 2.6 |
| 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 |

* 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 RR PREEMPT

| FUNCTION | PRE 1 |
|---|---|
| Exit Phase(s) | 8 |
| Preempt Override | ON |
| Delay Time | 0 |
| Ped Clear Trough Yellow | N |
| Terminate Phases | N |
| Track Clear Reservice | Y |
| Entrance Walk | - |
| Entrance Ped Clear | - |
| Entrance Min Green | 1 |
| Entrance Yellow Change | 25.5* |
| Entrance Red Clear | 25.5* |
| Track Clear Min Green | 15 |
| Track Clear Yellow Change | 3.0 |
| Track Clear Red Clear | 2.6 |
| Min Dwell Time | 12 |
| Exit Yellow Change | 25.5* |
| Exit Red Clear | 25.5* |

* Allows normal phase times to be used.

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40
1"=40'

US 401 Business (Robeson Street)
at
Village Drive

Division 6 Cumberland County Fayetteville

| PLAN DATE: July 2016 | REVIEWED BY: JPG |
|---|---|
| PREPARED BY: KGP, Jr. | REVIEWED BY: |

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

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

DocuSigned by:
Jason P. Galloway 9/21/2016
F700EA704818410 DATE

SIG. INVENTORY NO. 06-0060

21-SEP-2016 13:22
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