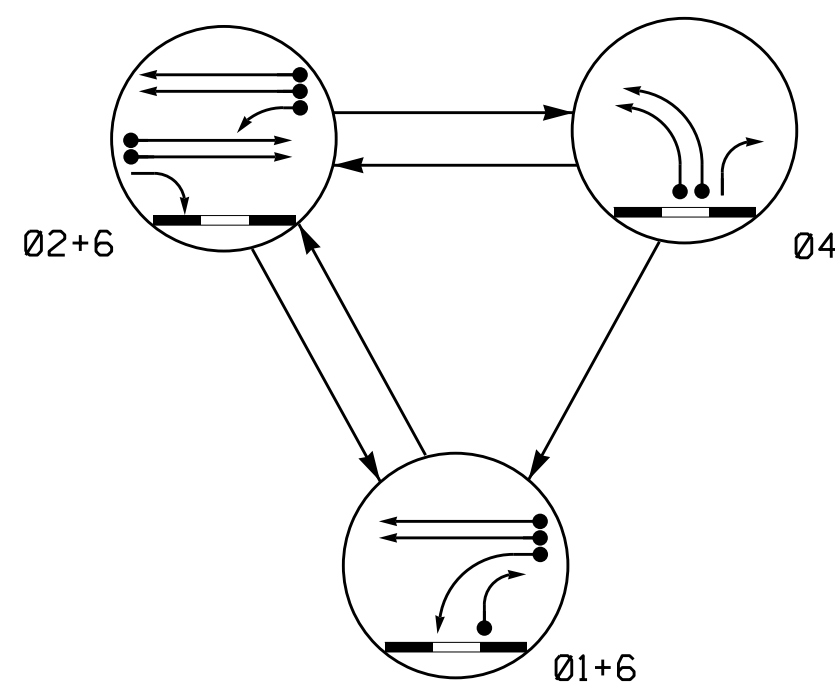


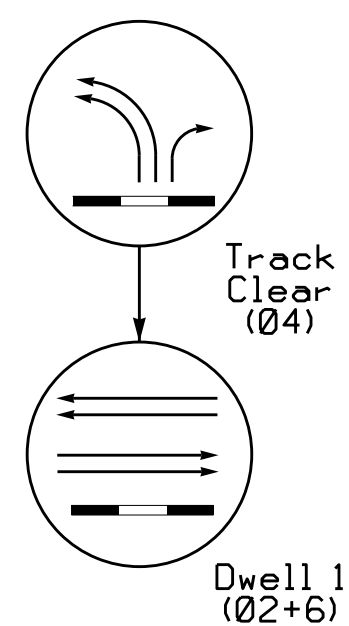
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

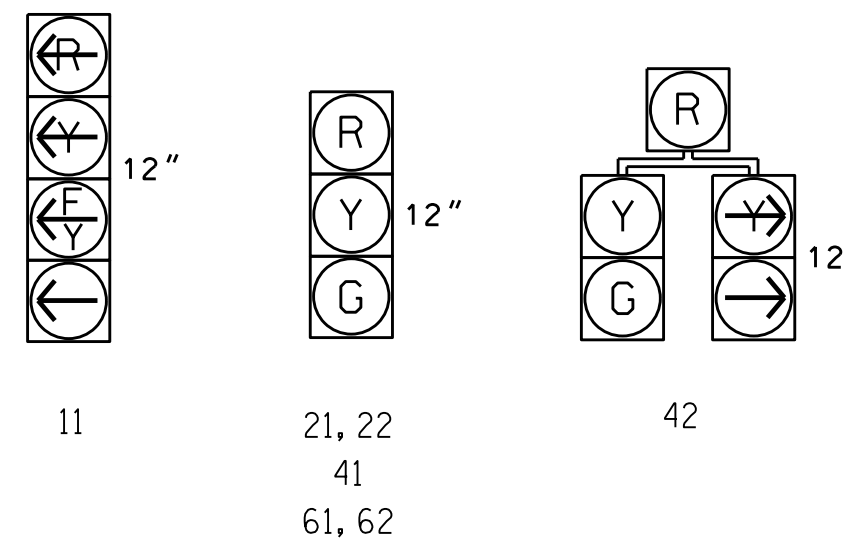
RAIL PREEMPT PHASES
(High Priority)



| SIGNAL FACE | PHASE | | | | | | | | | | | |
|-------------|-------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 01+6 | 02+6 | 04 | RR | RR | RR | RR | RR | RR | RR | RR | RR |
| 11 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21,22 | R | G | R | R | R | G | Y | | | | | |
| 41 | R | R | G | G | R | R | | | | | | |
| 42 | R | R | G | G | R | R | | | | | | |
| 61,62 | G | G | R | R | G | Y | | | | | | |
| Sign D | OFF | OFF | OFF | ON | ON | * | | | | | | |

* 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 | +5 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| | | | | | 6 | Yes | - | 3 | G | - | X |
| 1B | 6X60 | +5 | 2-4-2 | - | 1 | Yes | - | 15 | S | - | X |
| 2A,2B | 6X6 | 300 | 4 | - | 2 | Yes | - | - | N | - | X |
| 4A | 6X60 | +5 | 2-4-2 | - | 4 | Yes | - | - | S | - | X |
| 4B | 6X60 | +5 | 2-4-2 | - | 4 | Yes | - | - | S | - | X |
| 6A,6B | 6X6 | 300 | 4 | - | 6 | Yes | - | - | N | - | X |

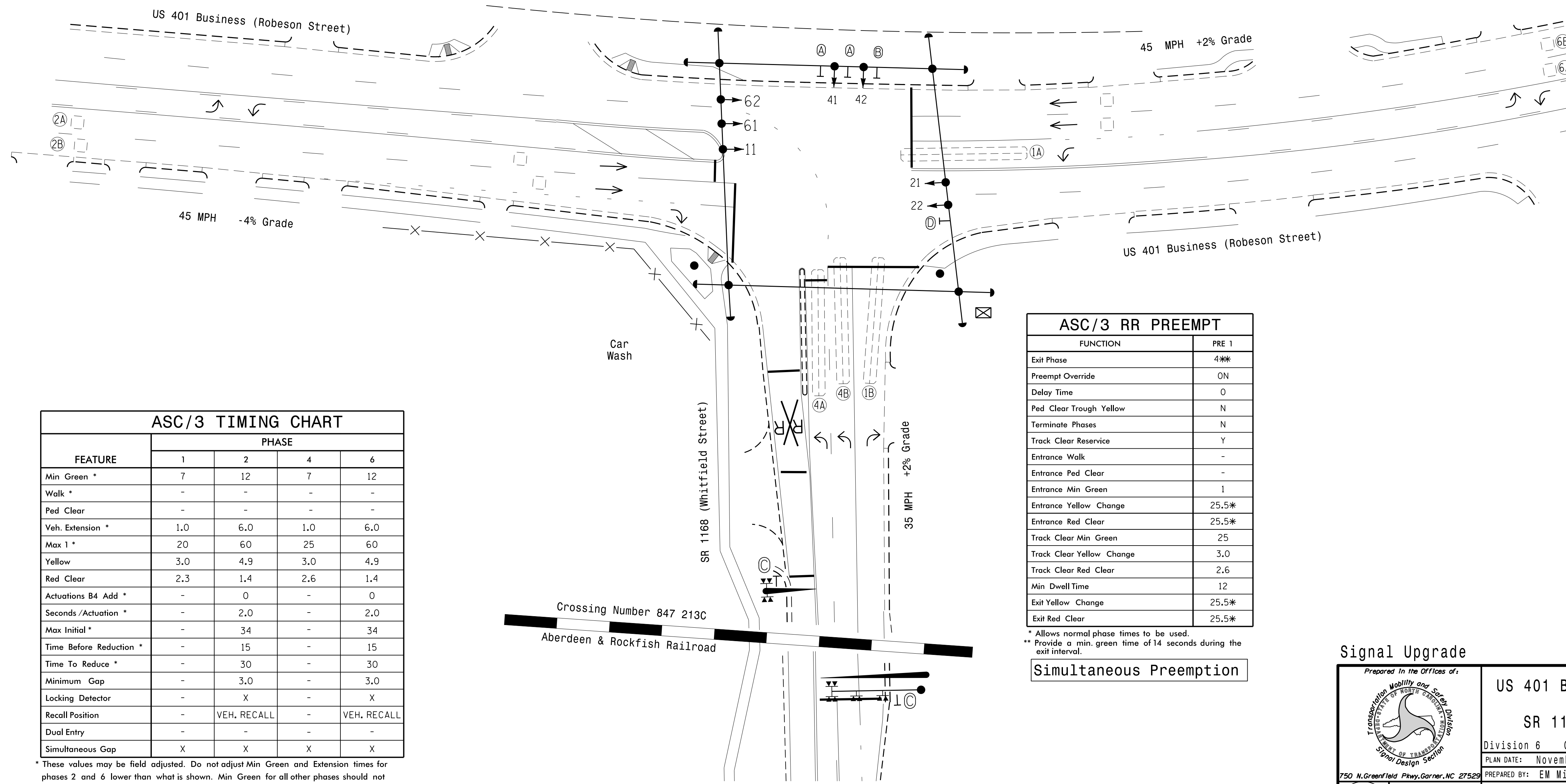
3 Phase Fully Actuated With Railroad Preemption Fayetteville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Phase 1 may be lagged.
- Set all detector units to presence mode.
- 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.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Pavement markings are existing.
- Ensure flashing operation does not alter operation of blankout signs.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

- | PROPOSED | EXISTING |
|--|--|
| | |
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| | |
| (A) Left Arrow "ONLY" Sign (R3-5L) | (A) Left Arrow "ONLY" Sign (R3-5L) |
| (B) Right Arrow "ONLY" Sign (R3-5R) | (B) Right Arrow "ONLY" Sign (R3-5R) |
| (C) "DO NOT STOP ON TRACKS" Sign (R8-8) | (C) "DO NOT STOP ON TRACKS" Sign (R8-8) |
| (D) "NO RIGHT TURN - TRAIN" L.E.D. Blankout Sign | (D) "NO RIGHT TURN - TRAIN" L.E.D. Blankout Sign |



| ASC/3 TIMING CHART | | | | |
|-------------------------|-------|-------------|-----|-------------|
| FEATURE | PHASE | | | |
| | 1 | 2 | 4 | 6 |
| Min Green * | 7 | 12 | 7 | 12 |
| Walk * | - | - | - | - |
| Ped Clear | - | - | - | - |
| Veh. Extension * | 1.0 | 6.0 | 1.0 | 6.0 |
| Max I * | 20 | 60 | 25 | 60 |
| Yellow | 3.0 | 4.9 | 3.0 | 4.9 |
| Red Clear | 2.3 | 1.4 | 2.6 | 1.4 |
| Actuations B4 Add * | - | 0 | - | 0 |
| Seconds / Actuation * | - | 2.0 | - | 2.0 |
| 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 | 4** |
| Preempt Override | ON |
| Delay Time | 0 |
| Ped Clear Trough Yellow | N |
| Terminate Phases | N |
| Track Clear Reserve | Y |
| Entrance Walk | - |
| Entrance Ped Clear | - |
| Entrance Min Green | 1 |
| Entrance Yellow Change | 25.5* |
| Entrance Red Clear | 25.5* |
| Track Clear Min Green | 25 |
| 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.
** Provide a min. green time of 14 seconds during the exit interval.

Simultaneous Preemption

Signal Upgrade

Prepared In the Offices of:

 TRANSPORTATION MOBILITY AND SAFETY SOLUTIONS, INC.
 MEMBER OF TRAVELER SYSTEMS
 Signal Design Section
 750 N. Greenfield Pkwy, Garner, NC 27529

US 401 Business (Robeson St) at SR 1168 (Whitfield St)

Division 6 Cumberland County Fayetteville
 PLAN DATE: November 2015 REVIEWED BY: JPG, PE
 PREPARED BY: EM Minshew REVIEWED BY:

REVISIONS: _____ INIT. DATE _____

DocuSigned by:

 Jason P. Gallaway 3/14/2016
 DATE: _____
 SIG. INVENTORY NO. 06-0052

SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL 029904
 JASON P. GALLOWAY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED