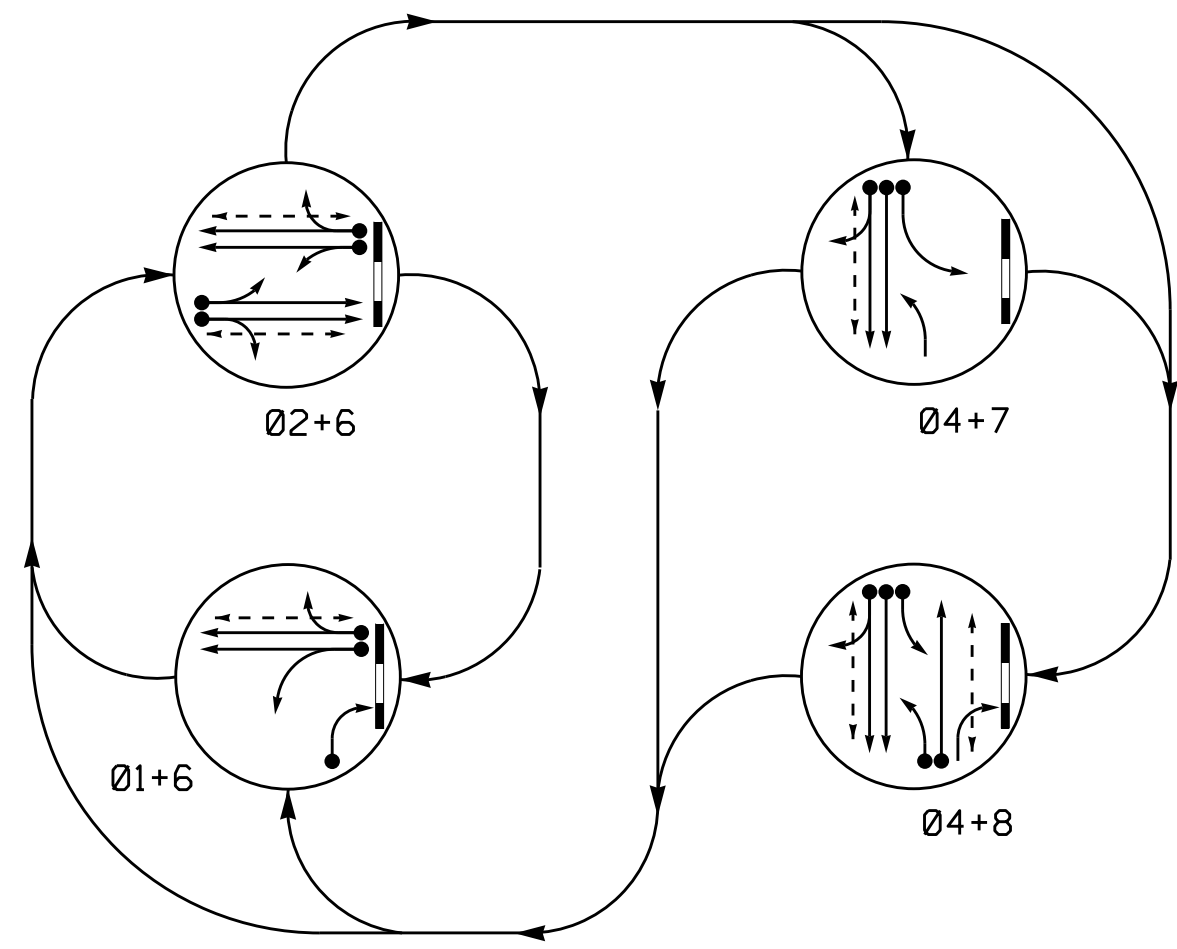
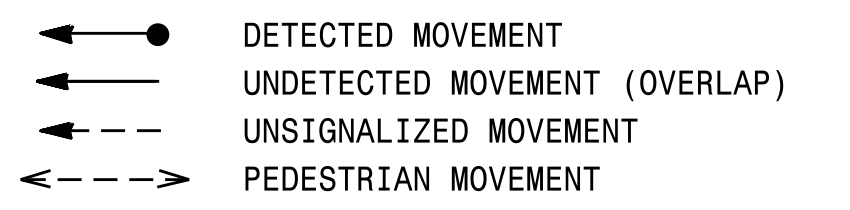


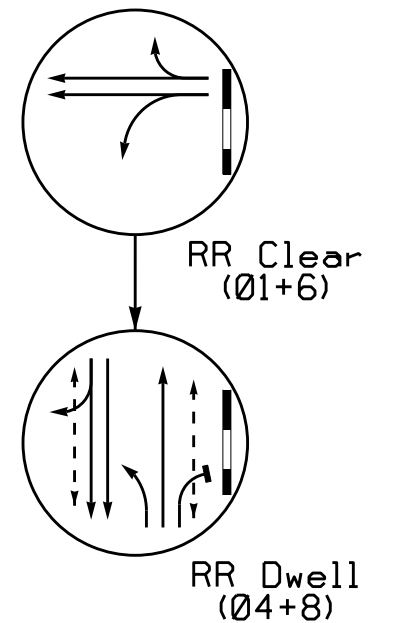
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND



RAIL PREEMPT PHASES

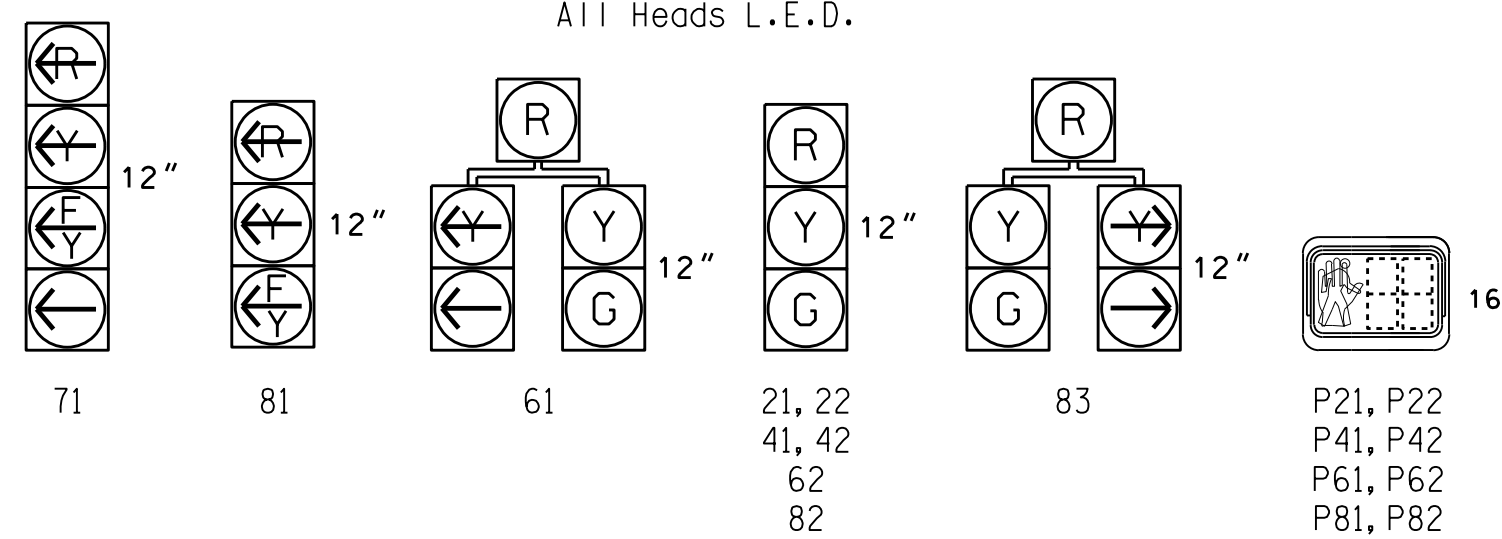


SIGNAL FACE	PHASE											
	01+6	02+6	04+7	04+8	C	D	F	L	S	H		
21, 22	R	G	R	R	R	R	R	Y				
41, 42	R	R	G	G	R	G	G	R				
61		G	R	R	G	R	Y					
62	G	G	R	R	G	R	Y					
71	R	R			R	R	R					
81	R	R			R	R	R					
82	R	R	R	G	R	G	R					
83	R	R	R	G	R	G	R					
P21, P22	DW	W	DW	DW	DW	DW	DRK					
P41, P42	DW	DW	W	W	DW	W	DRK					
P61, P62	W	W	DW	DW	DW	DW	DRK					
P81, P82	DW	DW	DW	W	DW	W	DRK					
SIGN B	OFF	OFF	OFF	OFF	OFF	OFF	ON	*				
SIGN E	OFF	OFF	OFF	OFF	OFF	OFF	ON	*				

* See Note 14.

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	DETECTOR PROGRAMMING								
				NEW LOOP	PHASE	CALLING	EXTENSION	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD	
1A	6X15	50	EXIST	-	1	Y	Y	-	-	5	-	Y
1B	6X40	0	2-4-2	-	1	Y	Y	-	-	15	-	Y
2A	6X40	0	2-4-2	-	2	Y	Y	-	-	-	-	Y
2B	6X40	0	2-4-2	-	2	Y	Y	-	-	-	-	Y
4A	6X40	0	2-4-2	-	4	Y	Y	-	-	-	-	Y
4B	6X40	0	2-4-2	-	4	Y	Y	-	-	10	-	Y
6A	6X40	0	2-4-2	-	6	Y	Y	-	-	-	-	Y
6B	6X40	0	2-4-2	-	6	Y	Y	-	-	-	-	Y
7A	6X40	0	2-4-2	-	7	Y	Y	-	-	15	-	Y
8A	6X40	0	2-4-2	-	8	Y	Y	-	-	3	-	Y
8B	6X40	0	2-4-2	-	8	Y	Y	-	-	-	-	Y

SIGNAL FACE I.D.



FEATURE	PHASE					
	1	2	4	6	7	8
Min Green 1 *	7	10	7	10	7	7
Extension 1 *	2.0	2.0	2.0	2.0	2.0	2.0
Max Green 1 *	15	60	25	60	15	25
Yellow Clearance	3.0	3.8	3.8	3.8	3.0	3.8
Red Clearance	2.3	1.7	1.3	1.7	1.9	1.3
Red Revert	2.0	2.0	2.0	5.0	2.0	2.0
Walk 1 *	-	4	4	4	-	4
Don't Walk 1	-	17	12	16	-	13
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	MIN RECALL	-	-
Vehicle Call Memory	-	-	-	-	-	-
Dual Entry	-	-	ON	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* 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.

FUNCTION	PRE 1
Interval 1 - Track Clearance Green	32
Interval 1 - Track Clearance Yellow	3,8
Interval 1 - Track Clearance Red	1,7
Interval 2 - Dwell Green	255
Interval 2 - Dwell Yellow	0,0*
Interval 2 - Dwell Red	0,0*
Interval 5 - Exit Green	1
Interval 5 - Yellow	0,0
Interval 5 - Red	0,0
Exit Phase(s)	2+6
Priority	HIGH
Delay Time	0,0
Min Green Before Pre	1
Ped Clear Before Pre	5
Yellow Clear Before Pre	3,8
Red Clear Before Pre	2,3
Dwell Min Time	7
Enable Backup Protection	Y
Ped Clear Through Yellow	Y
Omit Overlaps	A, D, P

* Time defaults to time used for phase during normal operation

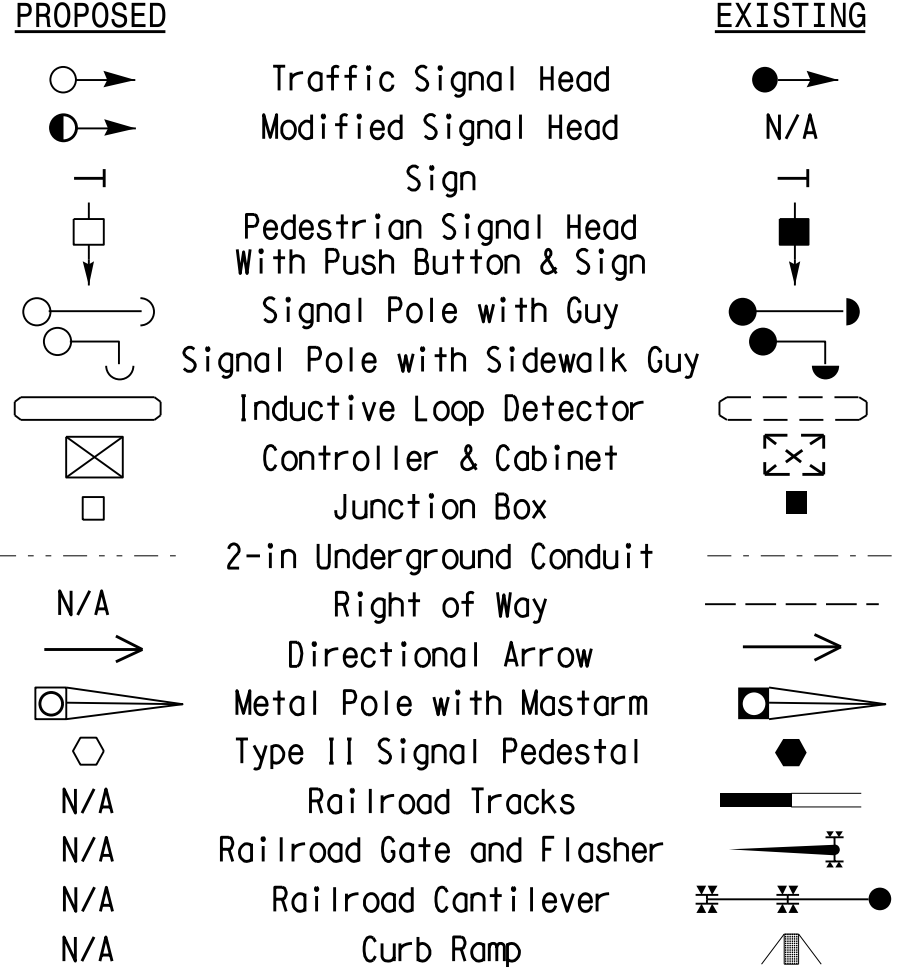
This signal is designed for simultaneous preemption.

4 Phase Fully Actuated w/ Railroad Preemption Asheville Signal System

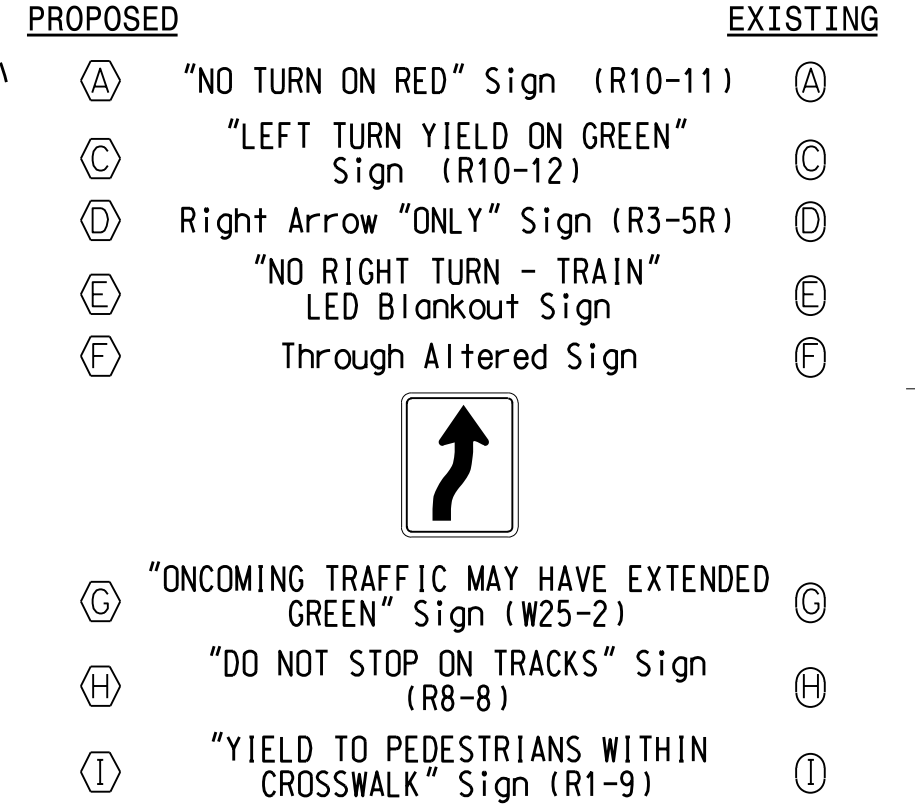
NOTES

- 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.
- Enable Backup Protect for phase 6 to allow the controller to clear from phase 2+6 to phase 1+6 by progressing through an all red display.
- Phase 7 may be lagged.
- Reposition existing signal heads numbered 42 and 82.
- 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.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Remove existing Westbound "Left Turn Yield on Green" ball sign (R10-12).
- Remove existing "NO LEFT TURN - TRAIN" LED Blankout Sign.
- Pavement markings are existing.
- Ensure flashing operation does not alter operation of blankout signs.
- Program parent phases for Overlap "P" for all phases used in normal operation.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND



SIGNS



Signal Upgrade

Prepared In the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529

NC 81 (Hendersonville Rd.) at US 25A (Lodge St.)

Division 13 Buncombe County Asheville
 PLAN DATE: January 2016 REVIEWED BY: T.J. Williams
 PREPARED BY: R.N. Zinser REVIEWED BY:

REVISIONS INIT. DATE

SCALE 0 30 1"=30'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 RICHARD N. ZINER
 043914
 11/7/2016
 DATE
 SIG. INVENTORY NO. 13-0242

07-NOV-2016 11:57
 S:\ITS\ASU\ITS_Sig\Signal\Western Region\01\13\41-4715B_Ashve1116_Signal_System\48\Sig\Design\116_Signal_System\48\Sig\Design\116_Sig\den_2015madd-dgn
 rnz:insr