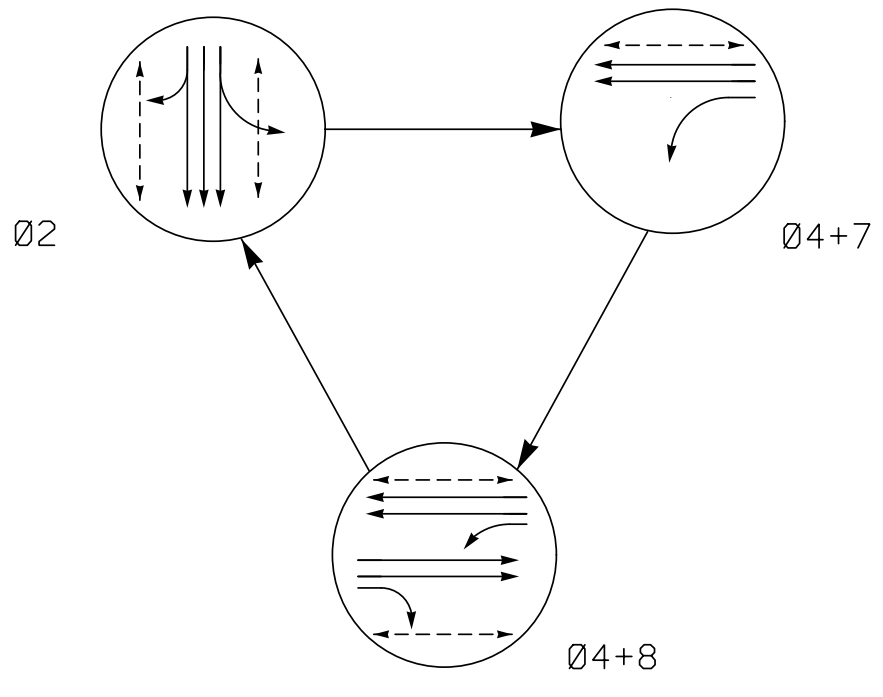


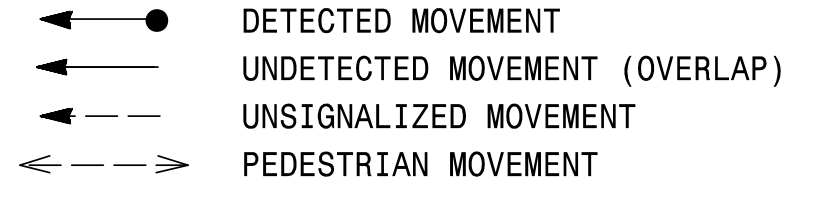
**DEFAULT PHASING DIAGRAM**



**DEFAULT PHASING TABLE OF OPERATION**

SIGNAL FACE	PHASE						
	Ø 2	Ø 4 + 7	Ø 4 + 8	PRE 3	PRE 4	PRE 5	FLASH
21,22,23	G	R	R	G	R	R	Y
41,42	R	↑	↑	R	↑	↑	R
71	←	←	←	←	←	←	←
81,82,83	R	R	G	R	R	G	R
P21,P22 P23,P24	W	DW	DW	DW	DW	DW	DRK
P41,P42	DW	W	W	DW	DW	DW	DRK
P81,P82	DW	DW	W	DW	DW	DW	DRK

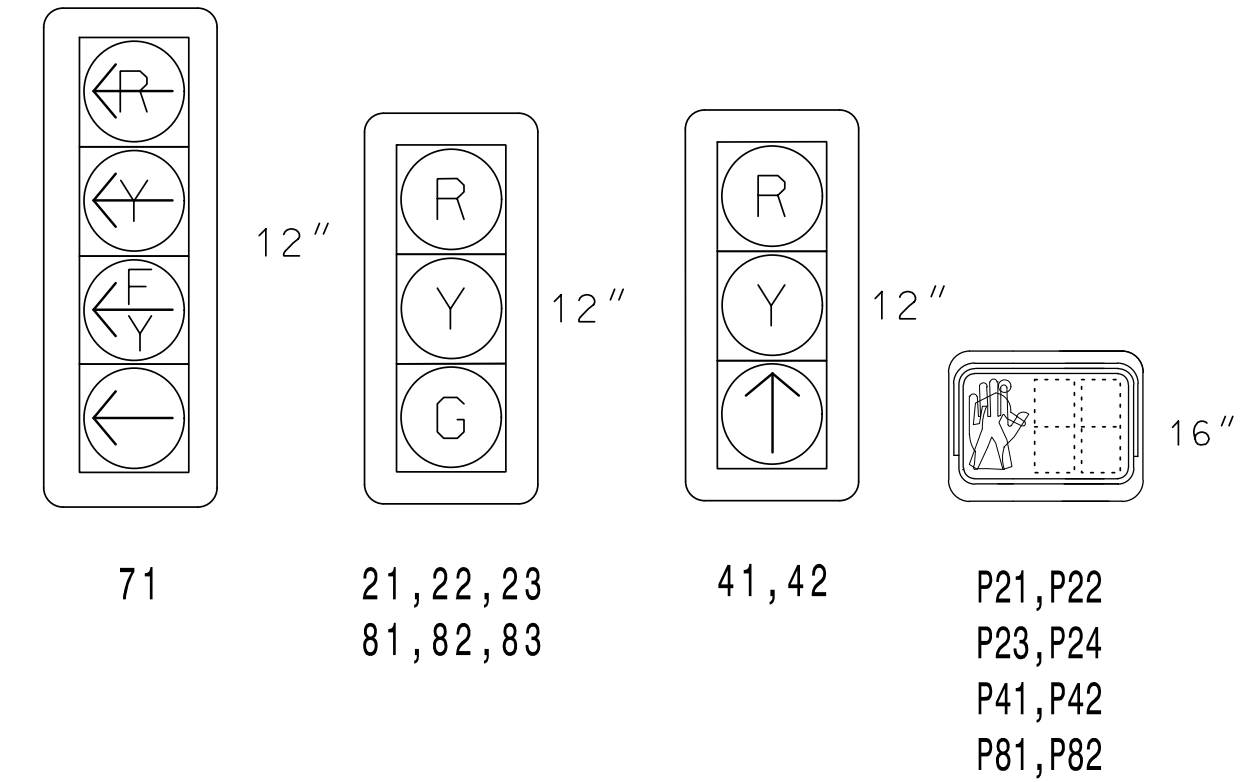
**PHASING DIAGRAM DETECTION LEGEND**



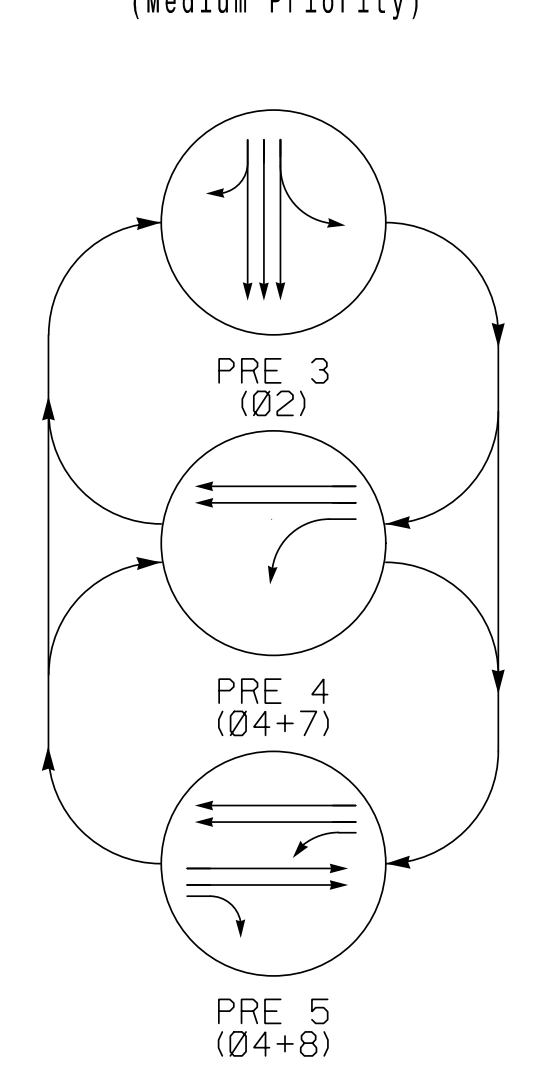
**SIGNAL FACE I.D.**

All Heads L.E.D.

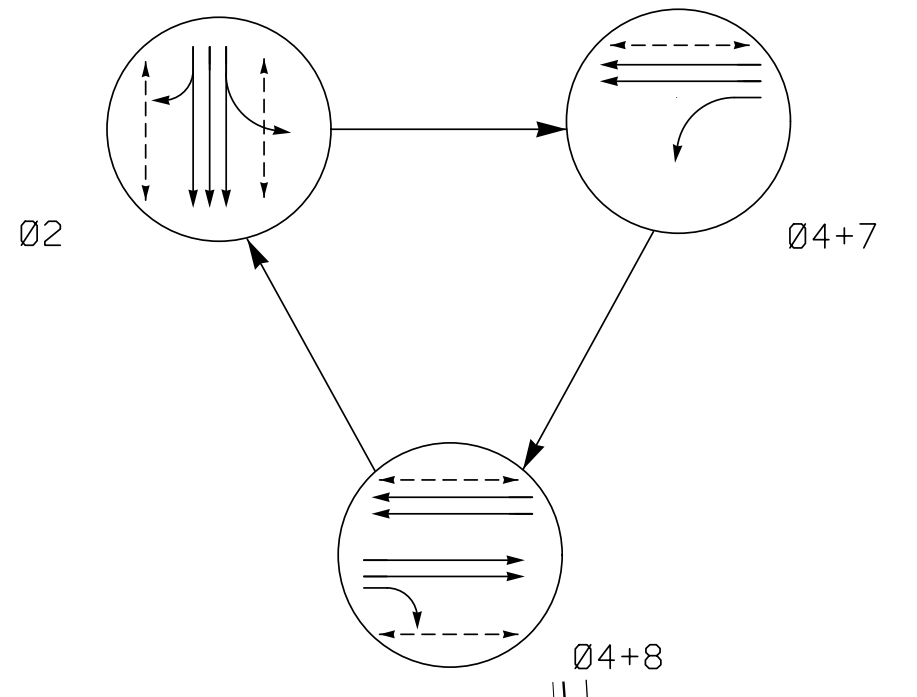
All heads have backplates with reflective borders



**DEFAULT EV PREEMPT PHASES (Medium Priority)**



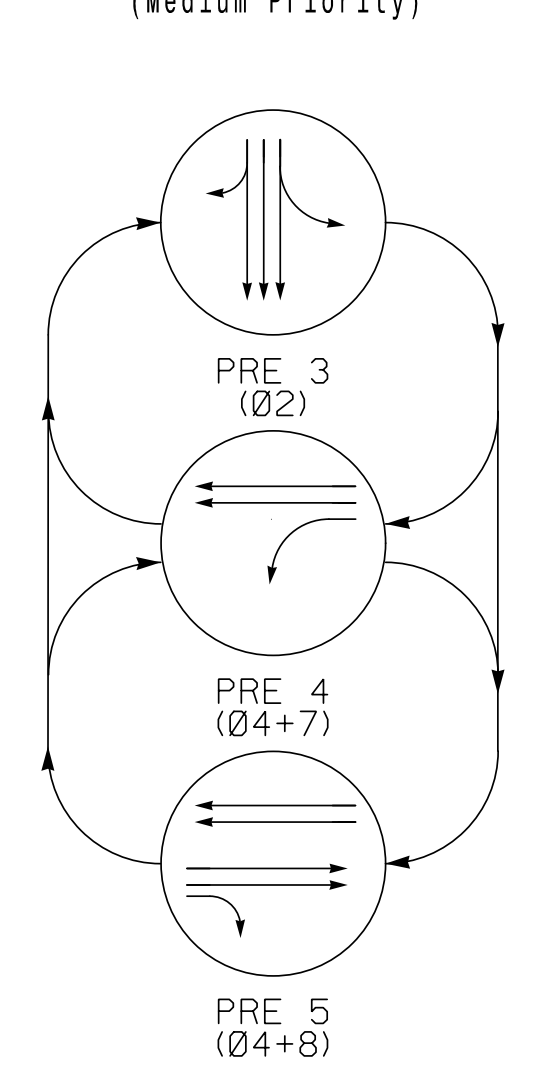
**ALTERNATE PHASING DIAGRAM**



**ALTERNATE PHASING TABLE OF OPERATION**

SIGNAL FACE	PHASE						
	Ø 2	Ø 4 + 7	Ø 4 + 8	PRE 3	PRE 4	PRE 5	FLASH
21,22,23	G	R	R	G	R	R	Y
41,42	R	↑	↑	R	↑	↑	R
71	←	←	←	←	←	←	←
81,82,83	R	R	G	R	R	G	R
P21,P22 P23,P24	W	DW	DW	DW	DW	DW	DRK
P41,P42	DW	W	W	DW	DW	DW	DRK
P81,P82	DW	DW	W	DW	DW	DW	DRK

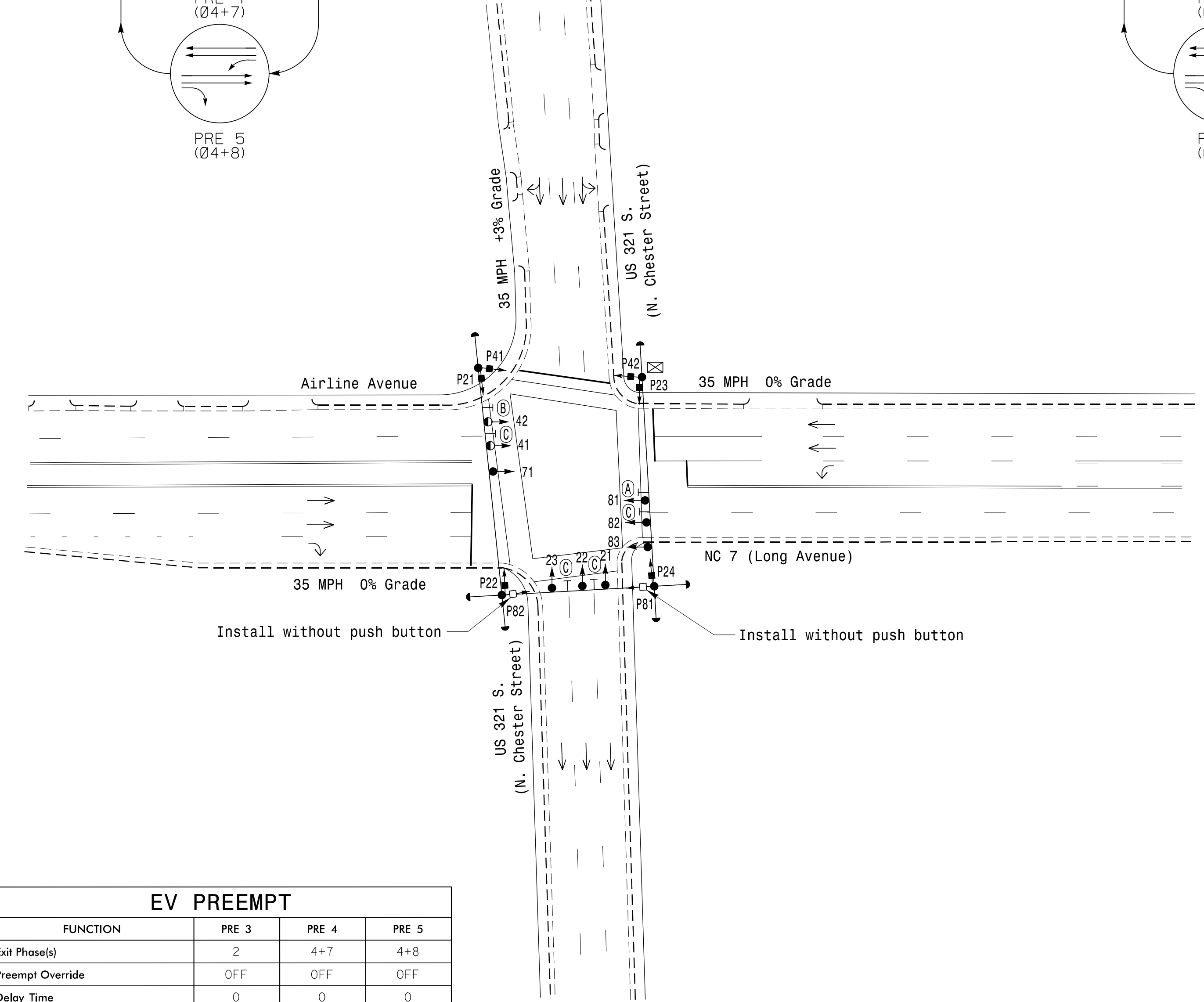
**ALTERNATE EV PREEMPT PHASES (Medium Priority)**



**3 Phase Pre-Timed w/ Alternate Phasing Operation and Emergency Vehicle Preemption Gastonia Signal System**

**NOTES**

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 7 may be lagged.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
6. Pavement markings are existing.
7. The City Engineer or their representative will determine the hours of use for each phasing plan.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
9. Install new cabinet on the existing cabinet foundation.
10. Existing phases 3, 4, and 8 have been changed to phases 7, 8, and 4 respectively on this plan. Change all signal heads, pedestrian signal heads, pedestrian push buttons, and loops as needed to achieve the phasing shown.
11. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
12. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
13. All proposed signal heads shall be black in color. See Project Special Provisions for details.
14. City of system data: Controller Asset #0203.

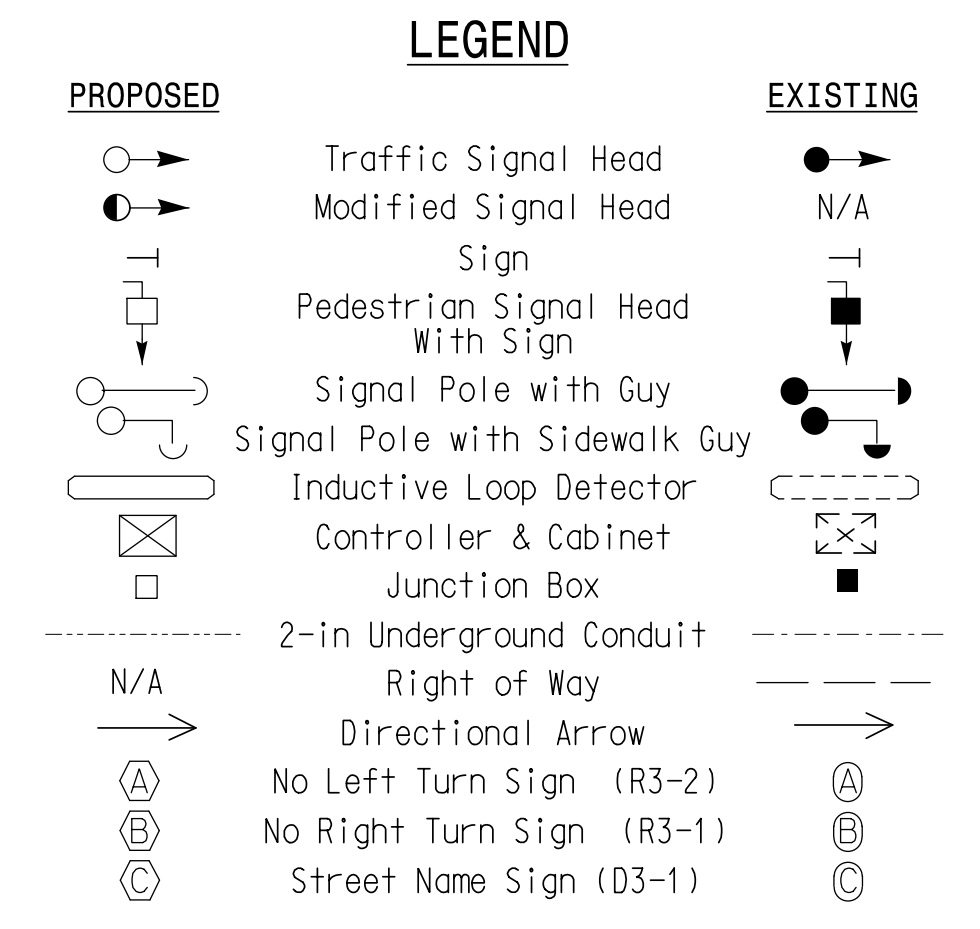


**TIMING CHART**

FEATURE	PHASE			
	2	4	7	8
Min Green *	10	7	7	7
Walk *	7	7	-	7
Ped Clear	23	14	-	11
Veh. Extension *	-	-	-	-
Max 1 *	60	30	15	30
Yellow	3.7	3.8	3.0	3.8
Red Clear	1.8	1.5	2.3	1.5
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds / Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	-	-	-	-
Recall Position	PED / MAX	PED / MAX	MAX RECALL	PED / MAX
Dual Entry	-	X	-	X
Simultaneous Gap	X	X	X	X

**EV PREEMPT**

FUNCTION	PRE 3	PRE 4	PRE 5
Exit Phase(s)	2	4+7	4+8
Preempt Override	OFF	OFF	OFF
Delay Time	0	0	0
Ped Clear Through Yellow	Y	Y	Y
Terminate Phases	N	N	N
Entrance Walk	1	1	1
Entrance Ped Clear	25.5*	25.5*	25.5*
Entrance Min Green	1	1	1
Entrance Yellow Change	25.5*	25.5*	25.5*
Entrance Red Clear	25.5*	25.5*	25.5*
Minimum Dwell Time	7	7	7
Preempt Input Extension Time **	2	2	2
Preempt Max Time	120	120	120
Exit Yellow Change	25.5*	25.5*	25.5*
Exit Red Clear	25.5*	25.5*	25.5*



\* 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.

\* Time defaults to time used for phase during normal operation.  
\*\* Program Timing on GPS Detection Unit.

**Signal Upgrade**

Prepared For: **US 321 S. (N. Chester Street) at NC 7 (Long Avenue) / Airline Avenue**

Division 12 Gaston County Gastonia

PLAN DATE: May 2021 REVIEWED BY: SL Phillips

PREPARED BY: CF Davis REVIEWED BY: KP Baumann

750 N. Greenfield Pkwy, Garner, NC 27529

PLANS PREPARED IN THE OFFICE OF: **Kimley-Horn**

NC License #0-102  
421 Fayetteville Street, Suite 600  
Raleigh, NC 27601  
(919) 677-2000

0 SCALE 40  
1" = 40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

North Carolina Professional Engineer Seal: KEVIN P. BAUMANN, ENGINEER, 044434

Signature: *[Signature]* DATE: 3/11/2022

SIG. INVENTORY NO. 12-0203

3/9/2022 11:15:30 AM Dan1116.Cur1 \*\*\*Kimley-Horn.com/E:\RAL\MRAL\TIP\DK-T15\011036569\_Gastonia Signal System9\_Signal\KWS4 - Signal Design\ME120205-2021.dgn