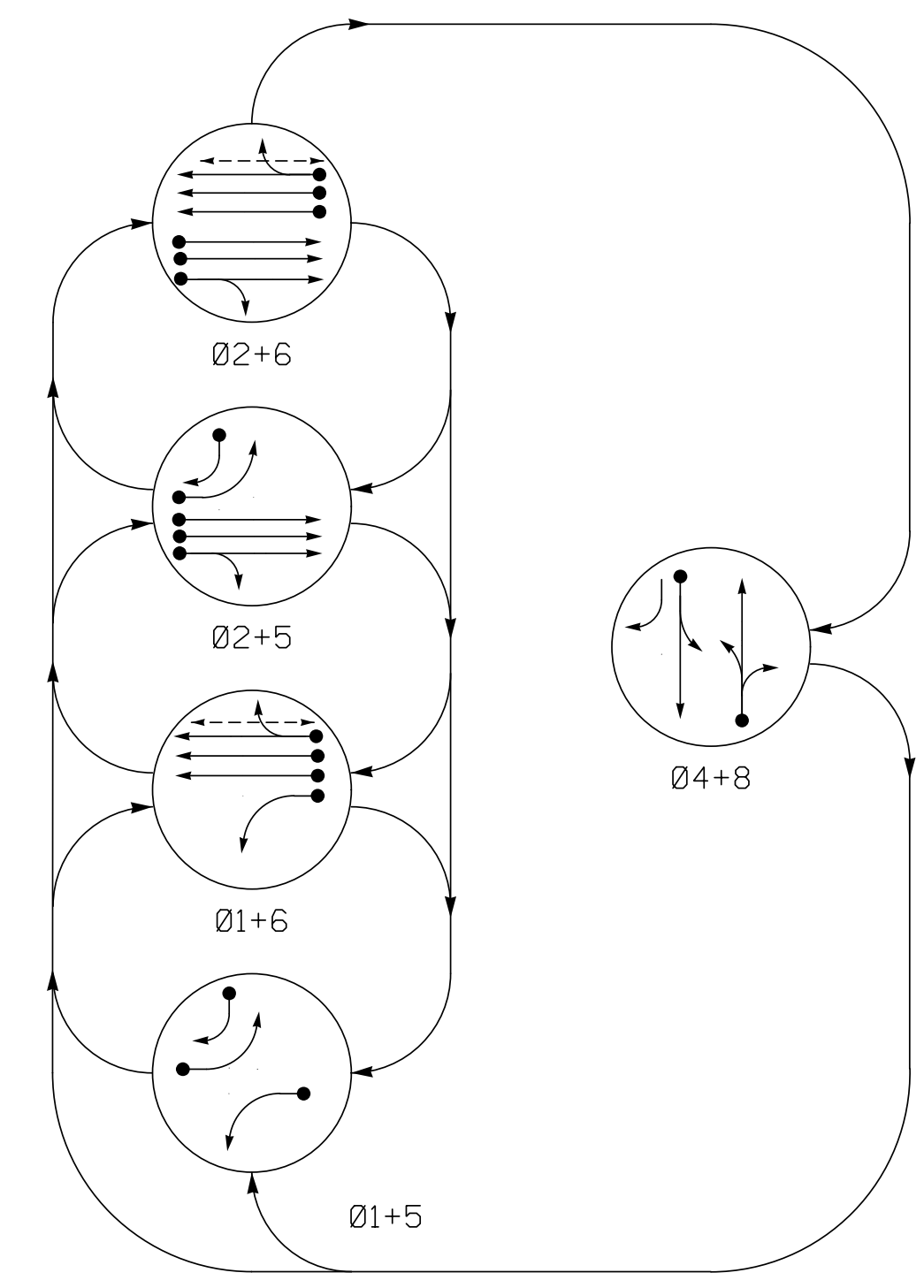


**PHASING DIAGRAM**



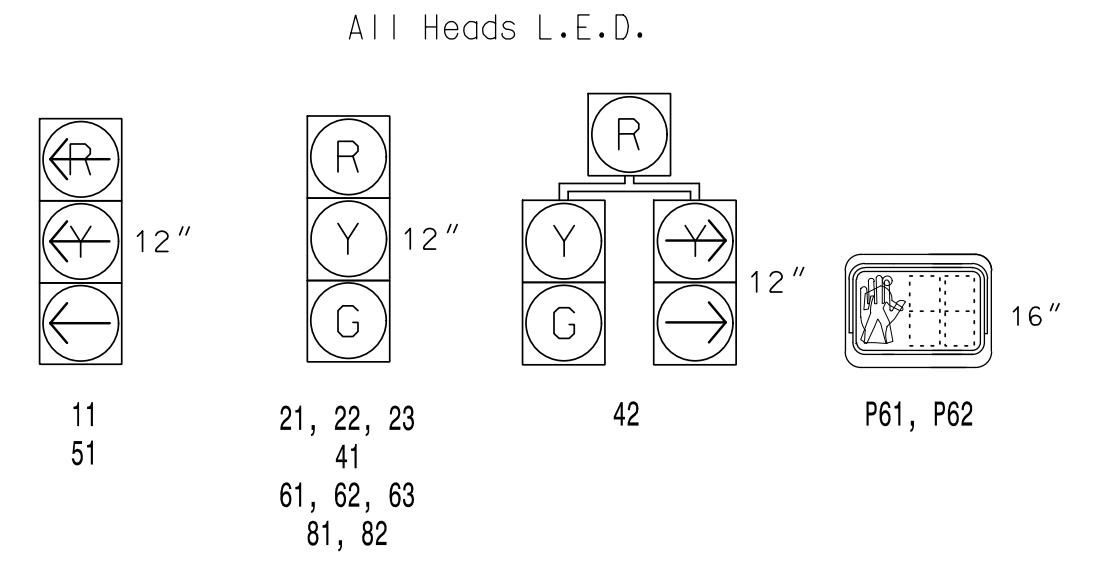
**PHASING DIAGRAM DETECTION LEGEND**

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

**TABLE OF OPERATION**

SIGNAL FACE	PHASE					FLASH
	Ø 1+5	Ø 1+6	Ø 2+5	Ø 2+6	Ø 4+8	
11	←	←	←	←	←	FR
21, 22, 23	R	R	G	G	R	Y
41	R	R	R	R	G	R
42	R	R	R	R	G	R
51	←	←	←	←	←	FR
61, 62, 63	R	G	R	G	R	Y
81, 82	R	R	R	G	R	Y
P61, P62	DW	W	DW	W	DW	DRK

**SIGNAL FACE I.D.**



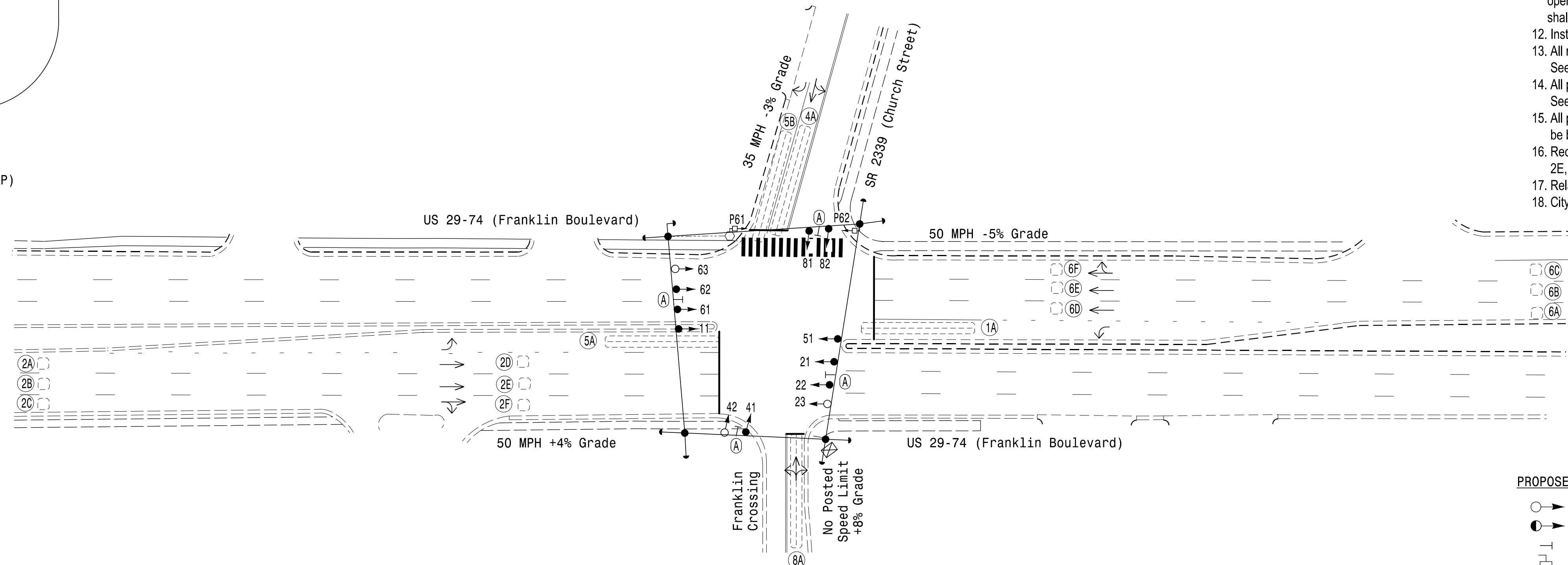
**DETECTOR INSTALLATION CHART**

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	LOOP	NEW CARD
1A	6X60	+5	2-4-2	-	1	Yes	-	-	-	N	-	X
2A	6X6	355	EXIST	-	2	Yes	1.9	-	-	N	-	X
2B	6X6	355	EXIST	-	2	Yes	1.9	-	-	N	-	X
2C	6X6	355	EXIST	-	2	Yes	1.9	-	-	N	-	X
2D	6X6	100	EXIST	-	2	Yes	-	-	-	N	-	X
2E	6X6	100	EXIST	-	2	Yes	-	-	-	N	-	X
2F	6X6	100	EXIST	-	2	Yes	-	-	-	N	-	X
4A	6X60	0	2-4-2	-	4	Yes	-	-	-	N	-	X
5A	6X60	0	2-4-2	-	5	Yes	-	-	-	N	-	X
5B	6X60	+5	2-4-2	-	5	Yes	-	10	-	N	-	X
6A	6X6	355	EXIST	-	6	Yes	1.9	-	-	N	-	X
6B	6X6	355	EXIST	-	6	Yes	1.9	-	-	N	-	X
6C	6X6	355	EXIST	-	6	Yes	1.9	-	-	N	-	X
6D	6X6	100	EXIST	-	6	Yes	-	-	-	N	-	X
6E	6X6	100	EXIST	-	6	Yes	-	-	-	N	-	X
6F	6X6	100	EXIST	-	6	Yes	-	-	-	N	-	X
8A	6X60	0	2-4-2	-	8	Yes	-	-	-	N	-	X

**5 Phase Fully Actuated Gastonia Signal System**

**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Reposition existing signal heads 21, 22, 61, and 62.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signal 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.
- Pavement markings are existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- Install new cabinet on the existing cabinet foundation.
- All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- All proposed pedestrian signal heads shall be black in color. See Project Special Provisions for details.
- All proposed pedestrian pedestals and pushbutton posts shall be black in color. See Project Special Provisions for details.
- Reconnect lead-in cable to separate loops 2A, 2B, 2C, 2D, 2E, 2F, 6A, 6B, 6C, 6D, 6E and 6F, as shown.
- Relabel existing loop 4B as 5B.
- City system data:  
Controller Asset #1563



**TIMING CHART**

FEATURE	PHASE						
	1	2	4	5	6	8	
Min Green *	7	14	7	7	14	7	
Walk *	-	-	-	-	7	-	
Ped Clear	-	-	-	-	17	-	
Veh. Extension *	1.0	2.0	1.0	1.0	2.0	1.0	
Max 1 *	15	60	30	15	60	30	
Yellow	3.1	4.5	4.1	3.0	5.4	4.1	
Red Clear	2.6	2.0	2.6	2.4	2.0	2.6	
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	
Actions B4 Add *	-	-	-	-	-	-	
Seconds /Actuation *	-	-	-	-	-	-	
Max Initial *	-	-	-	-	-	-	
Time Before Reduction *	-	-	-	-	-	-	
Time To Reduce *	-	-	-	-	-	-	
Minimum Gap	-	-	-	-	-	-	
Locking Detector	-	X	-	-	X	-	
Recall Position	-	MIN RECALL	-	-	MIN RECALL	-	
Dual Entry	-	-	X	-	-	X	
Simultaneous Gap	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**

- |   |                 |
|---|-----------------|
| <b>PROPOSED</b>                         | <b>EXISTING</b> |
| ○ → Traffic Signal Head                 | ● → N/A         |
| ○ → Modified Signal Head                | ○ → N/A         |
| ○ → Pedestrian Signal Head              | ○ → N/A         |
| ○ → Signal Pole with Push Button & Sign | ○ → N/A         |
| ○ → Type II Signal Pedestal             | ○ → N/A         |
| ○ → Signal Pole with Guy                | ○ → N/A         |
| ○ → Signal Pole with Sidewalk Guy       | ○ → N/A         |
| □ → Inductive Loop Detector             | □ → N/A         |
| □ → Controller & Cabinet                | □ → N/A         |
| □ → Junction Box                        | □ → N/A         |
| --- → 2-in Underground Conduit          | --- → N/A       |
| → → Right of Way                        | → → N/A         |
| → → Directional Arrow                   | → → N/A         |
| (A) → Street Name Sign (D3-1)           | (A) → N/A       |

**Signal Upgrade**

Prepared For:  
**Kimley-Horn**

PLANS PREPARED IN THE OFFICE OF:  
**Kimley-Horn**  
NC License #0102  
421 Fayetteville Street, Suite 600  
Raleigh, NC 27601  
(919) 677-2000

**US 29-74 (Franklin Boulevard)**  
at  
**SR 2339 (Church Street) / Franklin Crossing**

Division 12 Gaston County Gastonia

PLAN DATE: May 2021 REVIEWED BY: SL Phillips  
PREPARED BY: SP Pennington REVIEWED BY: KP Baumann

SCALE: 1" = 40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Seal of Professional Engineer  
K. P. BAUMANN  
044434

Disciplined by:  
Signature: \_\_\_\_\_ DATE: 3/11/2022  
Signature: \_\_\_\_\_ DATE: \_\_\_\_\_  
SIG. INVENTORY NO. 12-1563

3/9/2022 11:12:52 AM Don'tellb.Curr1 \*\*\*K:\mley-horn.com\SE\_RAL\MRAL\_TIP\DK-115\011036569\_Gastonia Signal System9\_Signal\KMS4 - Signal Design\121563-2021.dgn