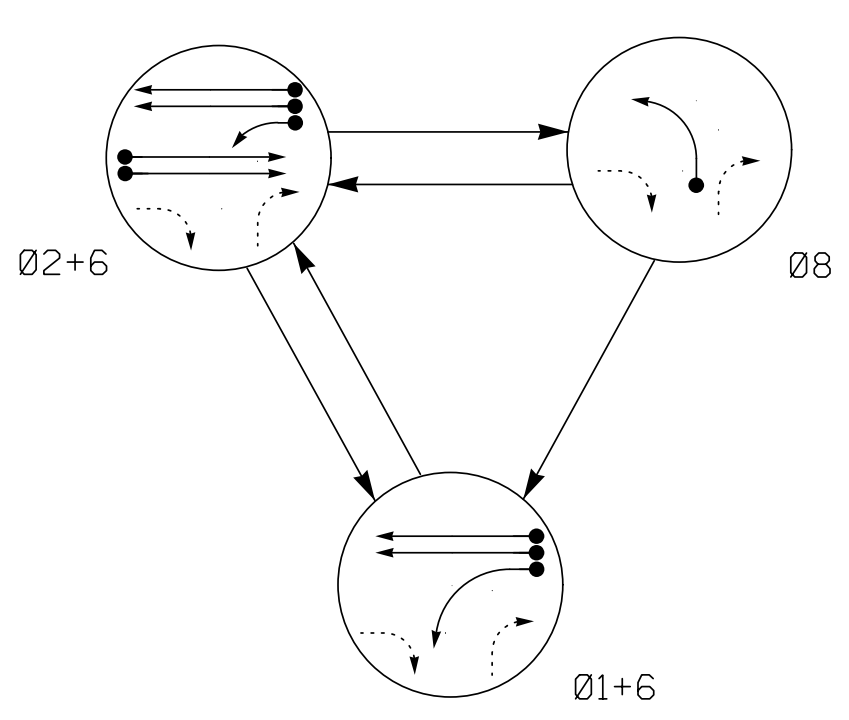
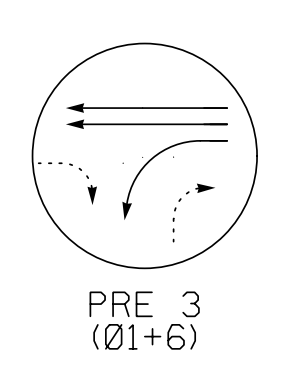


**DEFAULT PHASING DIAGRAM**



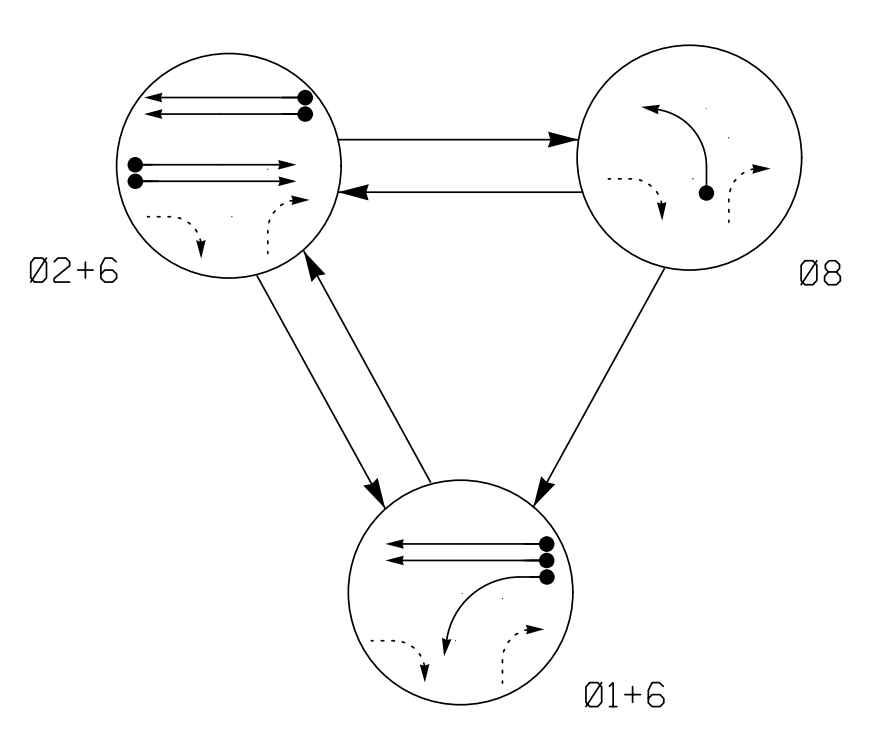
**DEFAULT EV PREEMPT PHASES (Medium Priority)**



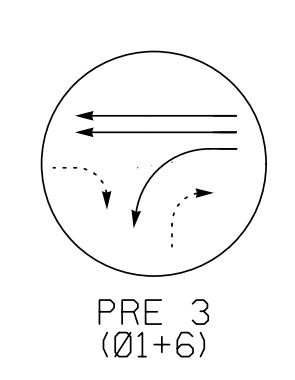
**DEFAULT PHASING TABLE OF OPERATION**

SIGNAL FACE	PHASE				
	Ø 1 + 6	Ø 2 + 6	Ø 8	PRE 3	F L HEADS
11	←	←	←	←	←
21, 22	R	G	R	R	Y
61, 62	G	G	R	G	Y
81, 82	R	R	G	R	R

**ALTERNATE PHASING DIAGRAM**



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



**ALTERNATE PHASING TABLE OF OPERATION**

SIGNAL FACE	PHASE				
	Ø 1 + 6	Ø 2 + 6	Ø 8	P FLASH	F L HEADS
11	←	←	←	←	←
21, 22	R	G	R	R	Y
61, 62	G	G	R	G	Y
81, 82	R	R	G	R	R

**3 Phase Fully Actuated w/ Alternate Phasing Operation and Emergency Vehicle Preemption Gastonia Signal System**

**NOTES**

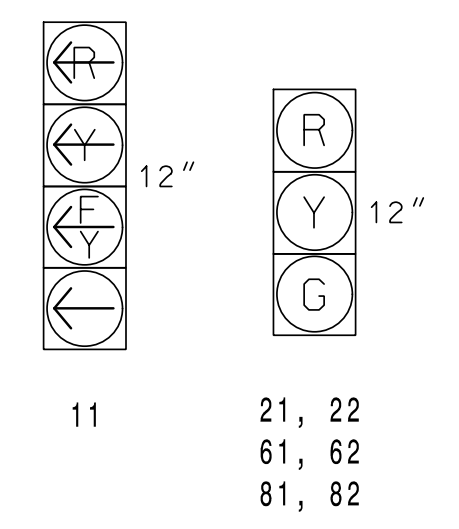
1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Set all detector units to presence mode.
5. Pavement markings are existing.
6. The City Engineer or their representative will determine the hours of use for each phasing plan.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
8. Install new cabinet on the existing cabinet foundation.
9. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
10. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
11. Existing phase 4 has been changed to phase 8 on this plan. Change all signal heads, pedestrian signal heads, pedestrian push buttons, and loops as needed to achieve the phasing shown.
12. City system data: Controller Asset #0931.

**PHASING DIAGRAM DETECTION LEGEND**

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

**SIGNAL FACE I.D.**

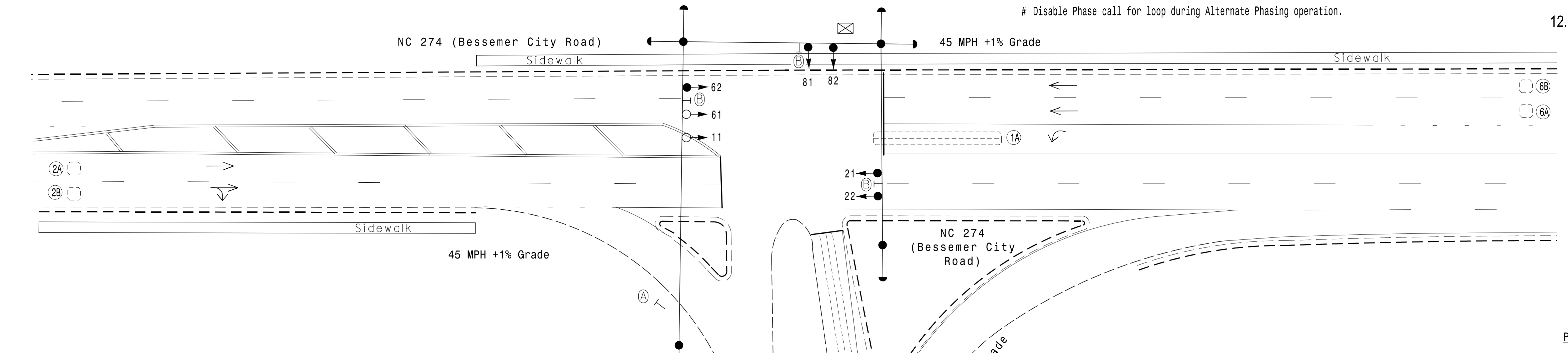
All Heads L.E.D.



**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	-	10*	-	N	-	X
2A	6X6	300	EXIST	-	6#	Yes	-	3	-	G	-	X
2B	6X6	300	EXIST	-	2	Yes	-	-	-	X	N	-
6A	6X6	300	EXIST	-	6	Yes	-	-	-	X	N	-
6B	6X6	300	EXIST	-	6	Yes	-	-	-	X	N	-
8A	6X60	0	2-4-2	-	8	Yes	-	-	-	N	-	X

\* Disable Delay during Alternate Phasing operation.  
# Disable Phase call for loop during Alternate Phasing operation.



**TIMING CHART**

FEATURE	PHASE			
	1	2	6	8
Min Green *	7	12	12	7
Walk *	-	-	-	-
Ped Clear	-	-	-	-
Veh. Extension *	2.0	6.0	6.0	2.0
Max 1 *	20	100	100	30
Yellow	3.0	4.4	4.4	3.0
Red Clear	2.3	1.2	1.2	2.6
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds / Actuation *	-	1.5	1.5	-
Max Initial *	-	34	34	-
Time Before Reduction *	-	15	15	-
Time To Reduce *	-	40	40	-
Minimum Gap	-	3.0	3.0	-
Locking Detector	-	X	X	-
Recall Position	-	MIN RECALL	MIN RECALL	-
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

**EV PREEMPT**

FUNCTION	PRE 3
Exit Phase(s)	2+6
Preempt Override	OFF
Delay Time	0
Ped Clear Through Yellow	N
Terminate Phases	N
Entrance Walk	-
Entrance Ped Clear	-
Entrance Min Green	1
Entrance Yellow Change	25.5*
Entrance Red Clear	25.5*
Minimum Dwell Time	7
Preempt Input Extension Time **	2
Preempt Max Time	120
Exit Yellow Change	25.5*
Exit Red Clear	25.5*

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

**LEGEND**

PROPOSED	EXISTING
○→ Traffic Signal Head	●→ Traffic Signal Head
○→ Modified Signal Head	N/A
□ Sign	□ Sign
○→ Pedestrian Signal Head	○→ Pedestrian Signal Head
○→ Signal Pole with Guy	○→ Signal Pole with Guy
○→ Signal Pole with Sidewalk Guy	○→ Signal Pole with Sidewalk Guy
⊗ Inductive Loop Detector	⊗ Inductive Loop Detector
□ Controller & Cabinet	□ Controller & Cabinet
□ Junction Box	□ Junction Box
⊗ 2-in Underground Conduit	⊗ 2-in Underground Conduit
N/A Right of Way	--- Right of Way
→ Directional Arrow	→ Directional Arrow
(A) "YIELD" Sign (R1-2)	(A) "YIELD" Sign (R1-2)
(B) Street Name Sign (D3-1)	(B) Street Name Sign (D3-1)

**Signal Upgrade**

Prepared For: **NC 274 (Bessemer City Road) at I-85 Southbound Ramp & Loop**

Division 12 Gaston County Gastonia

PLAN DATE: May 2021 REVIEWED BY: SL Phillips

PREPARED BY: SP Pennington REVIEWED BY: KP Baumann

Scale: 1" = 30'

3/9/2022 11:14:16 AM Dan1116.Cur1

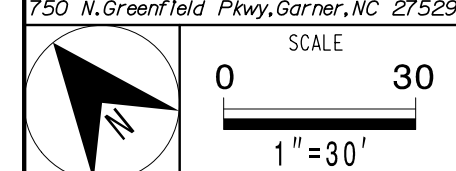
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Seal of Kevin P. Baumann, Professional Engineer, License No. 044434

Signature: Kevin P. Baumann, Date: 3/11/2022

SIG. INVENTORY NO. 12-0931

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



3/9/2022 11:14:16 AM Dan1116.Cur1 \*\*\*Kinley-Horn.com/E-RAL/WRAL-TP/DK-LTS/011036569 Gastonia Signal System9 Signal.kws4 - Signal Design Section