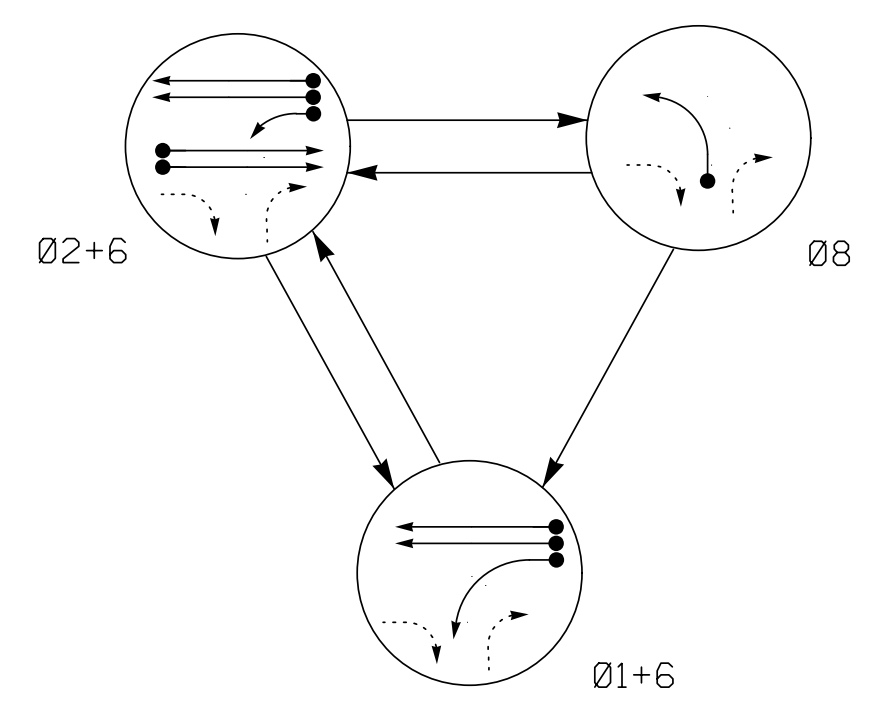
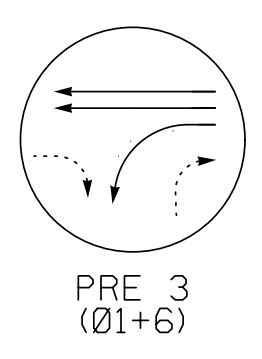


DEFAULT PHASING DIAGRAM



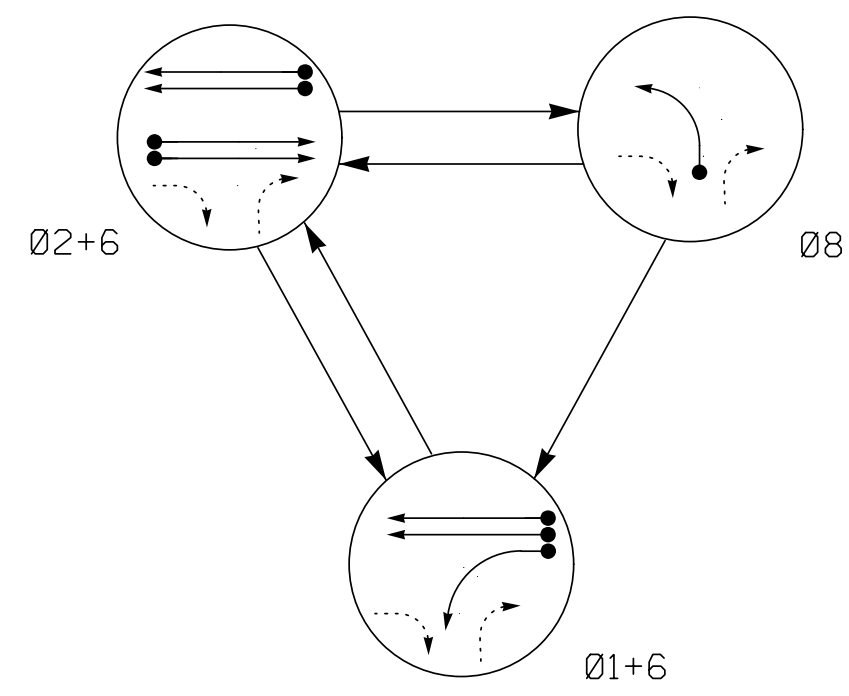
DEFAULT EV PREEMPT PHASES (Medium Priority)



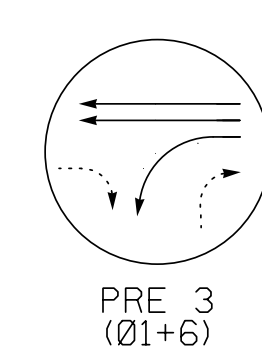
DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	Ø 1+6	Ø 2+6	Ø 8	P	F	L	S	H
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)



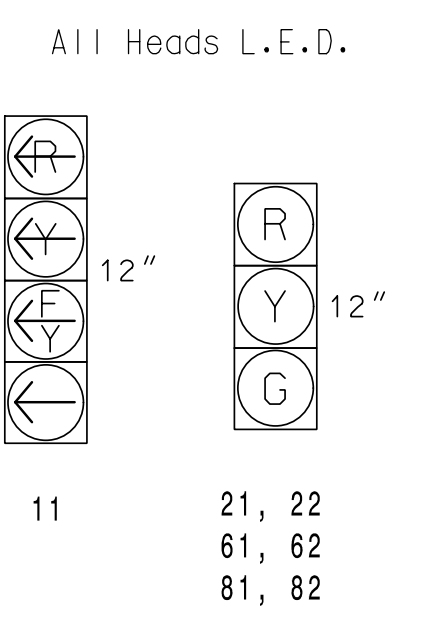
ALTERNATE PHASING TABLE OF OPERATION

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

PHASING DIAGRAM DETECTION LEGEND

- ←● DETECTED MOVEMENT
- ← UNDETECTED MOVEMENT (OVERLAP)
- ←- UN SIGNALIZED MOVEMENT
- ←- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.



DETECTOR INSTALLATION CHART

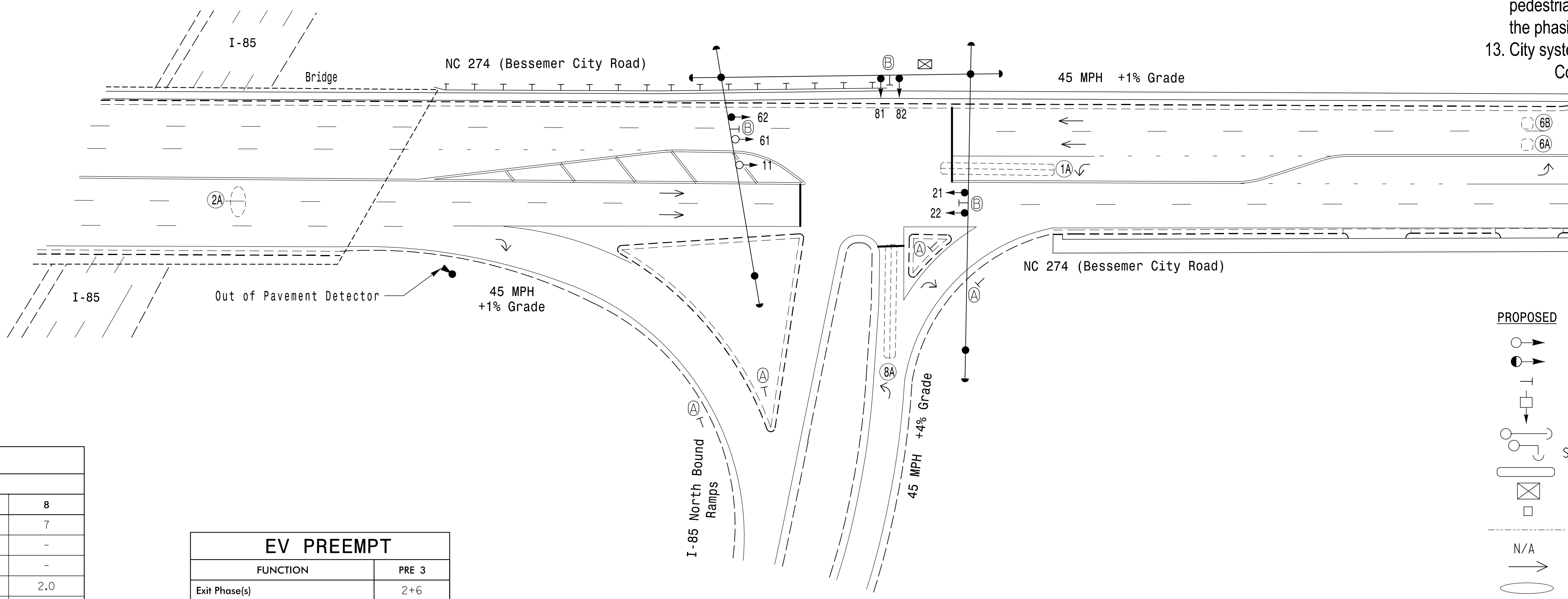
LOOP	DETECTOR			PROGRAMMING									
	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	LOOP	NEW	CARD
1A	6X60	+5	2-4-2	-	1	Yes	-	10*	-	N	-	X	
*2A	N/A	300	N/A	-	6#	Yes	-	3	-	G	-	X	
6A	6X6	300	EXIST	-	6	Yes	-	-	X	N	-	X	
6B	6X6	300	EXIST	-	6	Yes	-	-	X	N	-	X	
8A	6X60	0	2-4-2	-	8	Yes	-	3	-	N	-	X	

- * Microwave Detection
- * Disable Delay during Alternate Phasing operation.
- # Disable Phase call for loop during Alternate Phasing operation.

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. Reconnect lead-in cable to separate loops 6A & 6B, as shown.
11. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
12. 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.
13. City system data: Controller Asset #0928.



TIMING CHART

FEATURE	PHASE			
	1	2	6	8
Min Green *	7	15	15	7
Walk *	-	-	-	-
Ped Clear	-	-	-	-
Veh. Extension *	1.0	6.0	6.0	2.0
Max 1 *	15	90	90	25
Yellow	3.0	4.4	4.4	3.0
Red Clear	2.6	1.3	1.3	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*

LEGEND

PROPOSED	EXISTING
○→ Traffic Signal Head	●→ N/A
●→ Modified Signal Head	○→ N/A
⊥ Sign	⊥ N/A
⊥ Pedestrian Signal Head With Push Button & Sign	⊥ N/A
○→ Signal Pole with Guy	●→ Signal Pole with Sidewalk Guy
⊥ Signal Pole with Sidewalk Guy	⊥ N/A
⊥ Inductive Loop Detector	⊥ Junction Box
⊥ Junction Box	⊥ N/A
⊥ 2-in Underground Conduit	⊥ Right of Way
→ Directional Arrow	→ N/A
○ Microwave Detection Area	○ Out of Pavement Detector
⊥ "YIELD" Sign (R1-2)	⊥ Street Name Sign (D3-1)

3/9/2022 11:14:14 AM DanHelleCur1 ***K:\mly-horn.com\SE_RAL\MRAL_IP\DK-ITS\01036569_Gastonia Signal System9_Signal\SW54 - Signal Design\NC120928-2021.dgn

* 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

NC 274 (Bessemer City Road) at I-85 Northbound Ramp & Loop

Division 12 Gaston County Gastonia

PLAN DATE: May 2021 REVIEWED BY: SL Phillips

PREPARED BY: SP Pennington REVIEWED BY: KP Baumann

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Disciplined by:

DATE: 3/11/2022

SIG. INVENTORY NO. 12-0928

PLANS PREPARED IN THE OFFICE OF:
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