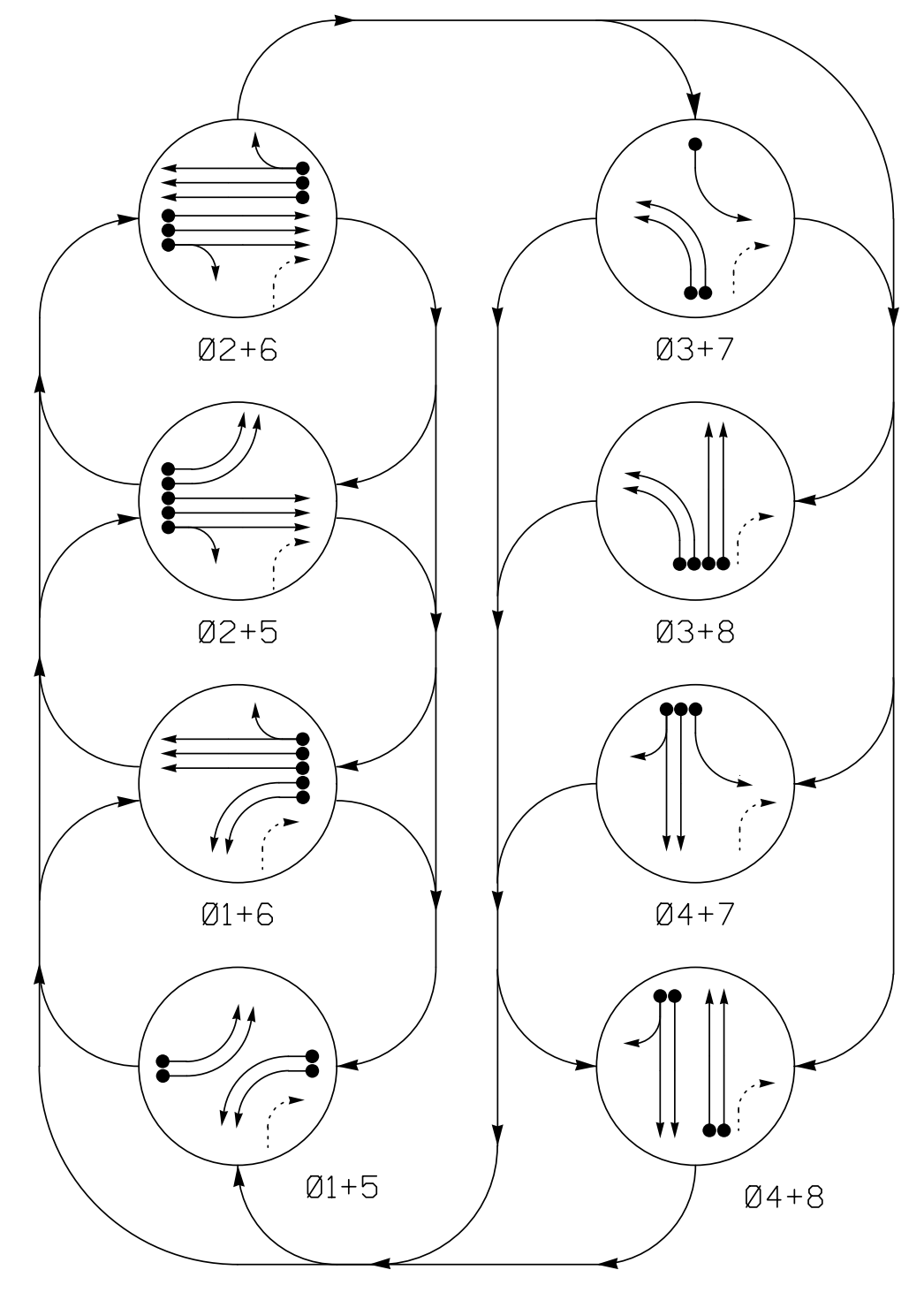


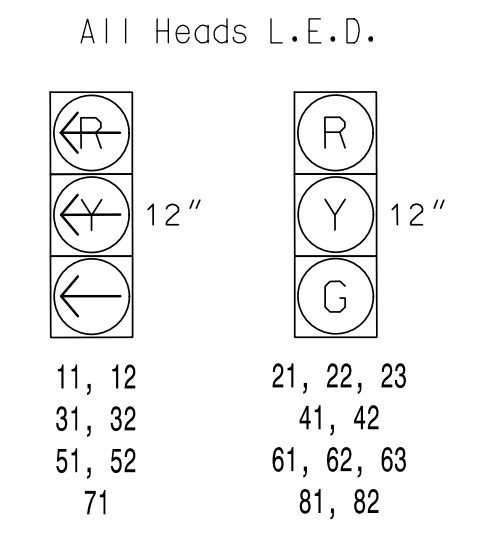
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE I.D.



EV PREEMPT PHASES
(Medium Priority)

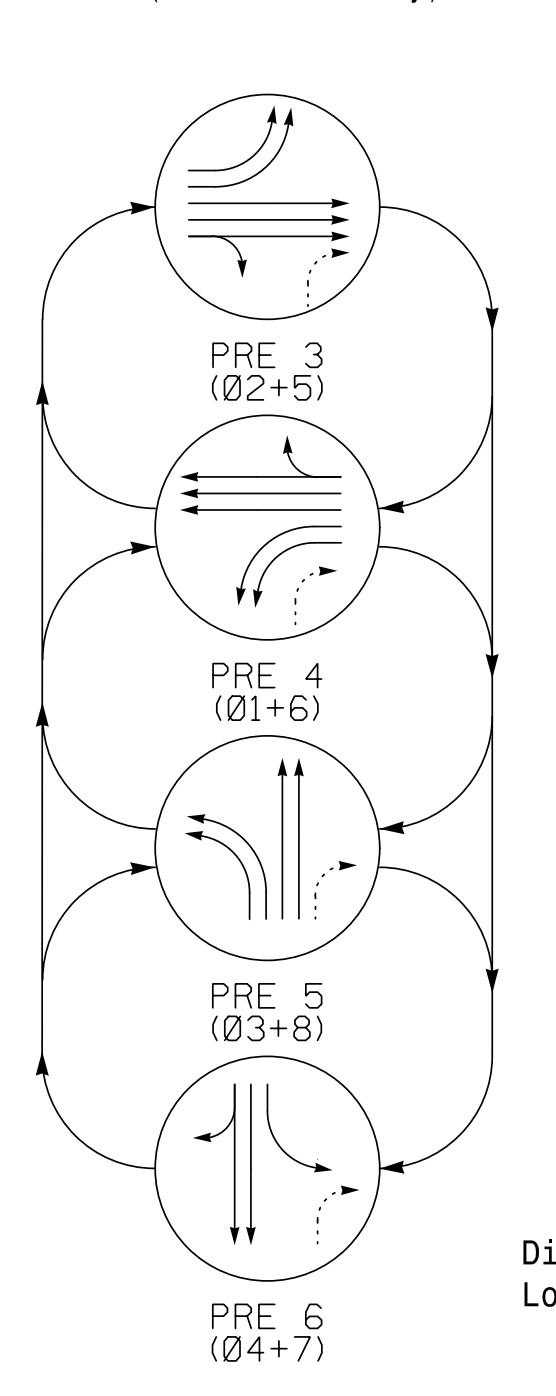


TABLE OF OPERATION

SIGNAL FACE	PHASE											
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	PRE 3	PRE 4	PRE 5	PRE 6
11, 12	←	←	←	←	←	←	←	←	←	←	←	←
21, 22, 23	R	R	G	G	R	R	R	R	G	R	R	R
31, 32	←	←	←	←	←	←	←	←	←	←	←	←
41, 42	R	R	R	R	R	R	G	G	R	R	R	G
51, 52	←	←	←	←	←	←	←	←	←	←	←	←
61, 62, 63	R	G	R	G	R	R	R	R	R	G	R	R
71	←	←	←	←	←	←	←	←	←	←	←	←
81, 82	R	R	R	R	R	G	R	G	R	R	G	R
SIGN 'C'	*	*	*	*	*	*	*	*	*	*	*	OFF
SIGN 'D'	*	*	*	*	*	*	*	*	*	*	*	OFF
SIGN 'E'	*	*	*	*	*	*	*	*	*	*	*	OFF
SIGN 'F'	*	*	*	*	*	*	*	*	*	*	*	OFF

* Changeable Trailblazer Signs controlled remotely

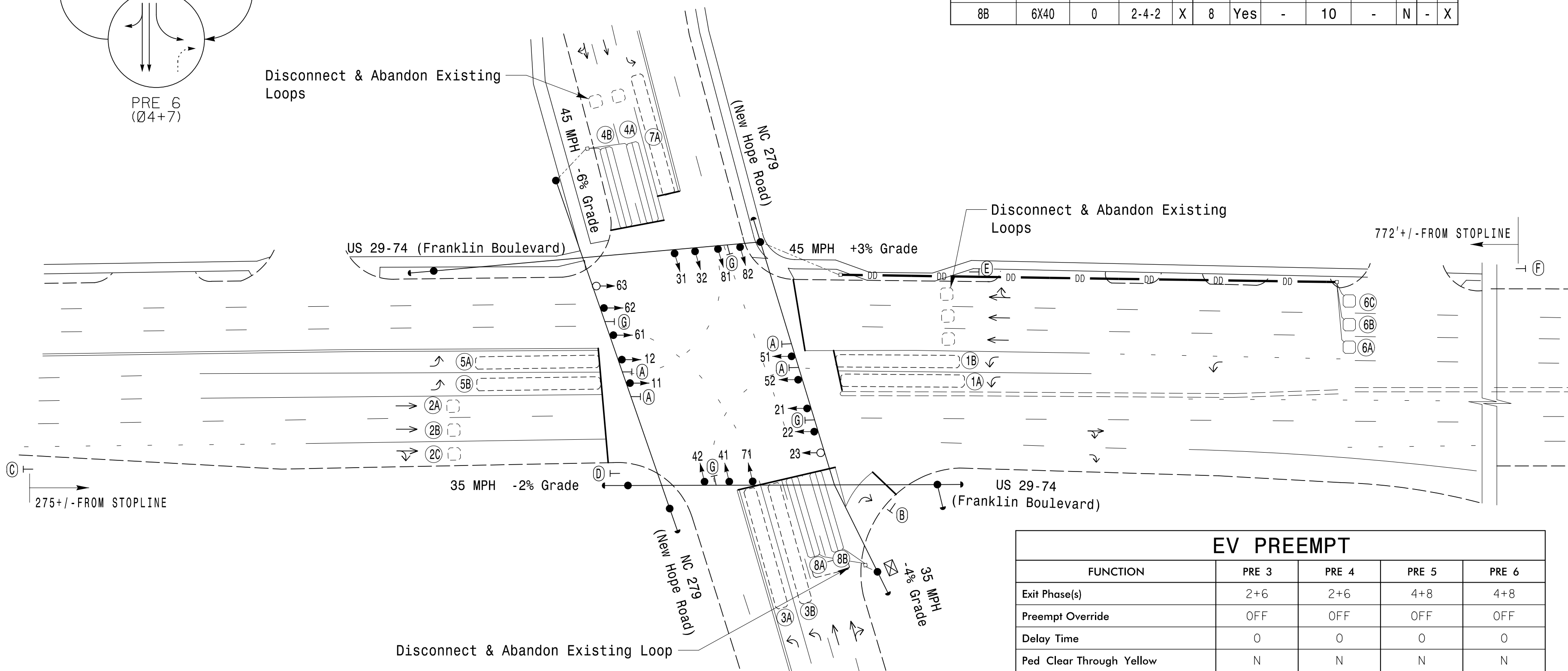
DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	LOOP SYSTEM	NEW CARD
1A	6X60	0	EXIST	-	1	Yes	-	-	-	N	-	X
1B	6X60	0	EXIST	-	1	Yes	-	-	-	N	-	X
2A	6X6	70	EXIST	-	2	Yes	-	-	-	N	-	X
2B	6X6	70	EXIST	-	2	Yes	-	-	-	N	-	X
2C	6X6	70	EXIST	-	2	Yes	-	-	-	N	-	X
3A	6X60	0	EXIST	-	3	Yes	-	3	-	N	-	X
3B	6X60	0	EXIST	-	3	Yes	-	-	-	N	-	X
4A	6X40	0	2-4-2	X	4	Yes	-	-	-	N	-	X
4B	6X40	0	2-4-2	X	4	Yes	-	10	-	N	-	X
5A	6X80	0	EXIST	-	5	Yes	-	-	-	N	-	X
5B	6X60	0	EXIST	-	5	Yes	-	-	-	N	-	X
6A	6X6	300	6	X	6	Yes	-	-	X	N	-	X
6B	6X6	300	6	X	6	Yes	-	-	X	N	-	X
6C	6X6	300	6	X	6	Yes	-	-	X	N	-	X
7A	6X60	0	EXIST	-	7	Yes	-	-	-	N	-	X
8A	6X40	0	2-4-2	X	8	Yes	-	-	-	N	-	X
8B	6X40	0	2-4-2	X	8	Yes	-	10	-	N	-	X

8 Phase Fully Actuated w/ Emergency Vehicle Preemption 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.
- Phase 3 and/or phase 7 may be lagged.
- 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.
- Pavement markings are existing.
- Reposition existing signal heads 21, 22, 61, and 62.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- Disconnect and abandon existing loops 4A, 4B, 6A, 6B, 6C, and 8A and recut new loops as shown on plan.
- 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.
- Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
- City system data:
Controller Asset #0050



LEGEND

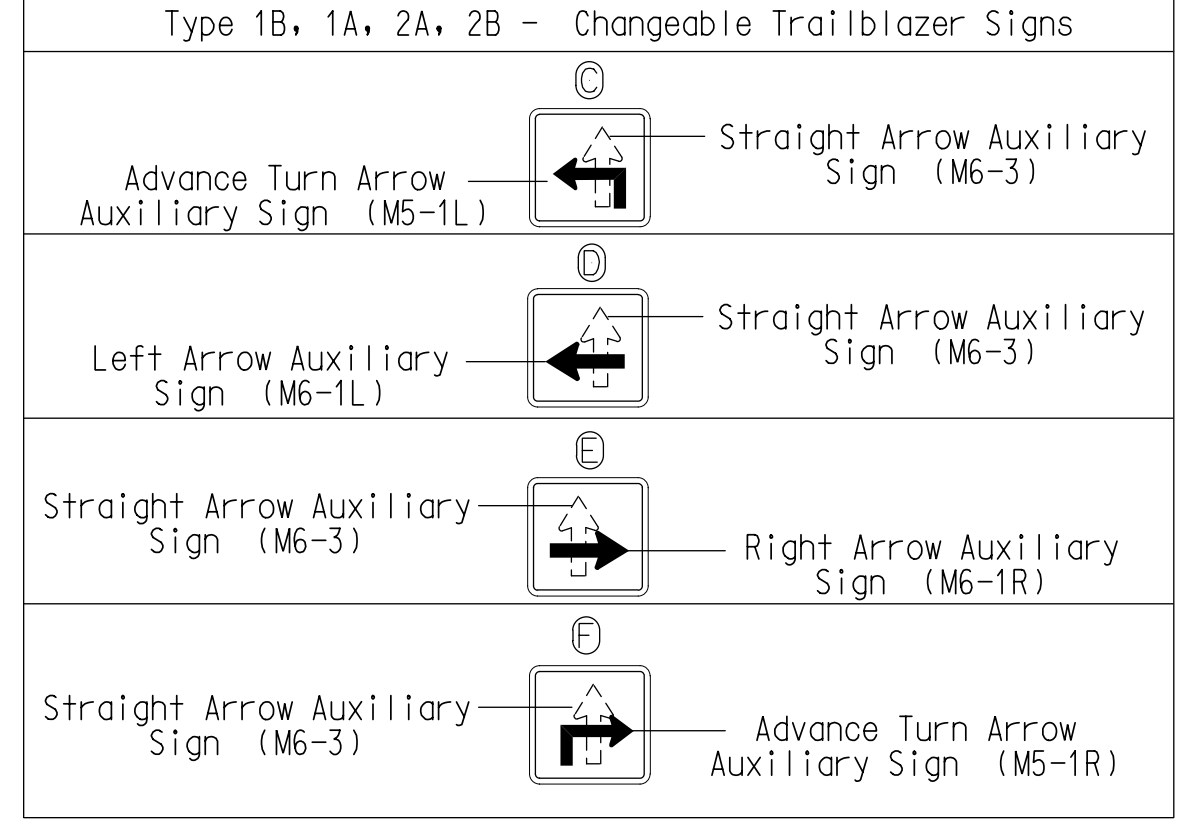
PROPOSED	EXISTING
○ Traffic Signal Head	● N/A
○ Modified Signal Head	○ N/A
○ Sign	○ N/A
○ Pedestrian Signal Head With Push Button & Sign	○ N/A
○ Signal Pole with Guy	○ N/A
○ Signal Pole with Sidewalk Guy	○ N/A
○ Inductive Loop Detector	○ N/A
○ Controller & Cabinet	○ N/A
○ Junction Box	○ N/A
○ 2-in Underground Conduit	○ N/A
○ Right of Way	○ N/A
○ Directional Arrow	○ N/A
○ Left Arrow "ONLY" Sign (R3-5L)	○ N/A
○ "YIELD" Sign (R1-2)	○ N/A
○ Type 1B Changeable Trailblazer sign (See Figure 1)	○ N/A
○ Type 1A Changeable Trailblazer sign (See Figure 1)	○ N/A
○ Type 2A Changeable Trailblazer sign (See Figure 1)	○ N/A
○ Type 2B Changeable Trailblazer sign (See Figure 1)	○ N/A
○ Street Name Sign (D3-1)	○ N/A

EV PREEMPT

FUNCTION	PRE 3	PRE 4	PRE 5	PRE 6
Exit Phase(s)	2+6	2+6	4+8	4+8
Preempt Override	OFF	OFF	OFF	OFF
Delay Time	0	0	0	0
Ped Clear Through Yellow	N	N	N	N
Terminate Phases	N	N	N	N
Entrance Walk	-	-	-	-
Entrance Ped Clear	-	-	-	-
Entrance Min Green	1	1	1	1
Entrance Yellow Change	25.5*	25.5*	25.5*	25.5*
Entrance Red Clear	25.5*	25.5*	25.5*	25.5*
Minimum Dwell Time	7	7	7	7
Preempt Input Extension Time **	2	2	2	2
Preempt Max Time	120	120	120	120
Exit Yellow Change	25.5*	25.5*	25.5*	25.5*
Exit Red Clear	25.5*	25.5*	25.5*	25.5*

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

FIGURE 1



TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	10	7	10	7	10	7	10
Walk *	-	-	-	-	-	-	-	-
Ped Clear	-	-	-	-	-	-	-	-
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max 1 *	2.0	6.0	2.0	3.0	2.0	6.0	2.0	3.0
Yellow	3.0	4.0	3.0	5.1	3.0	4.3	3.1	4.1
Red Clear	2.9	2.1	3.3	3.2	2.9	2.0	3.6	3.2
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-	-	-	-	-
Seconds /Actuation *	-	-	-	-	-	1.0	-	-
Max Initial *	-	-	-	-	-	34	-	-
Time Before Reduction *	-	-	-	-	-	15	-	-
Time To Reduce *	-	-	-	-	-	45	-	-
Minimum Gap	-	-	-	-	-	3.0	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	MIN RECALL	-	MIN RECALL	-	MIN RECALL	-	MIN RECALL
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	X	X	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.

Signal Upgrade

Prepared For: **US 29-74 (Franklin Boulevard) at NC 279 (New Hope Road)**

Division 12 Gaston County Gastonia

PLAN DATE: May 2021 REVIEWED BY: SL Phillips

PREPARED BY: CF Davis REVIEWED BY: KP Baumann

REVISIONS: INIT. DATE

Scale: 1" = 40'

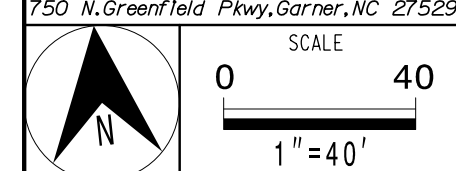
Document Not Considered Final Unless All Signatures Completed

North Carolina Professional Engineer Seal 044434

Signature: [Signature] Date: 3/11/2022

Signature Inventory No. 12-0050

PLANS PREPARED IN THE OFFICE OF:
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11:12:19 AM Dantellie.Cur1 ***Inley-Horn.com/E-RAL/IRAL-TIP/DK-TIS/011036569 Gastonia Signal System9 Signal/SES4 - Signal Design/120050-2021.dgn 3/9/2022