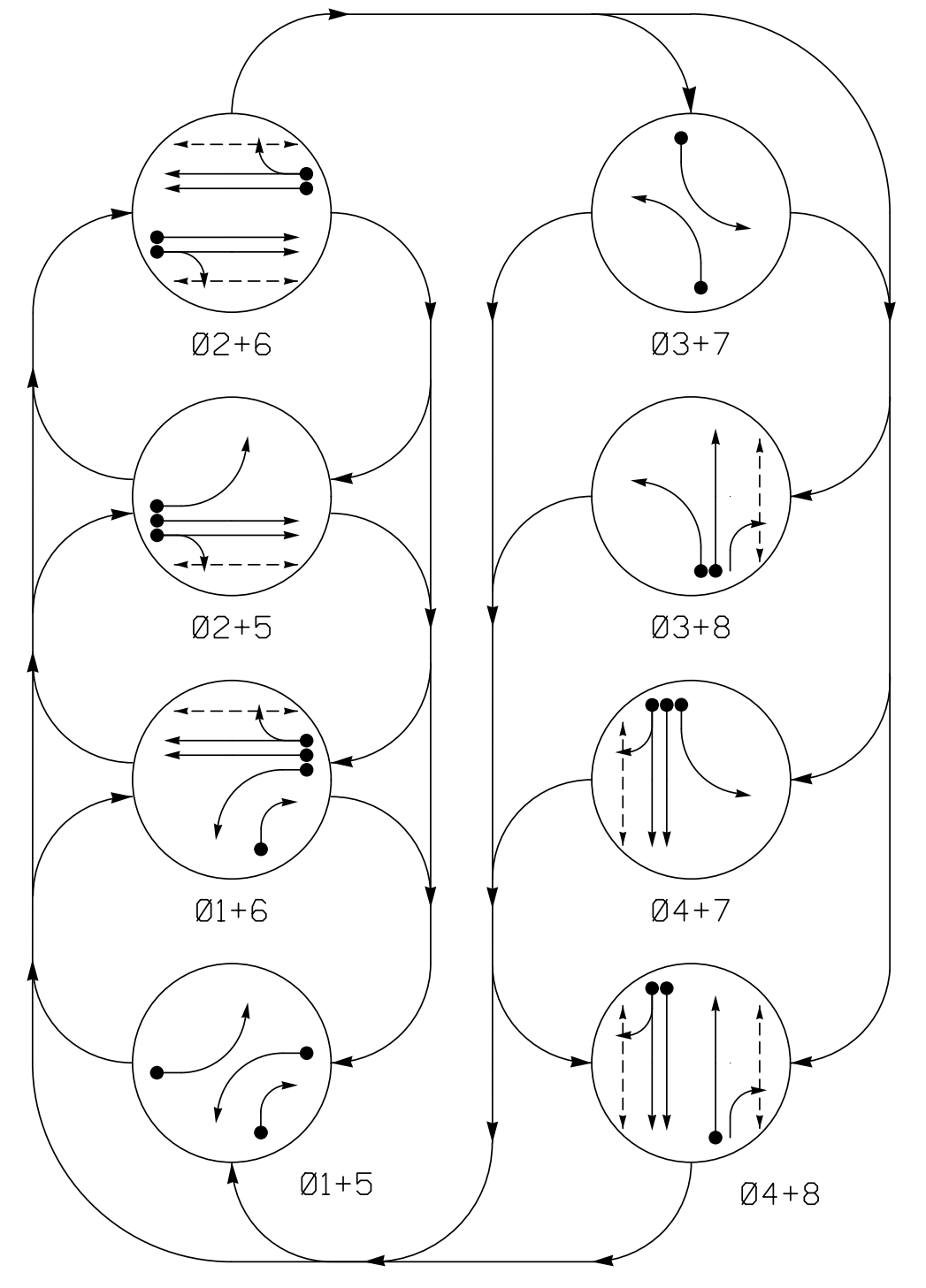


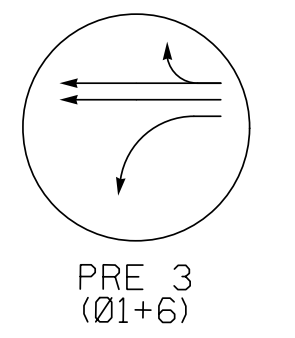
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

EV PREEMPT PHASES
(Medium Priority)



SIGNAL FACE I.D.
All Heads L.E.D.

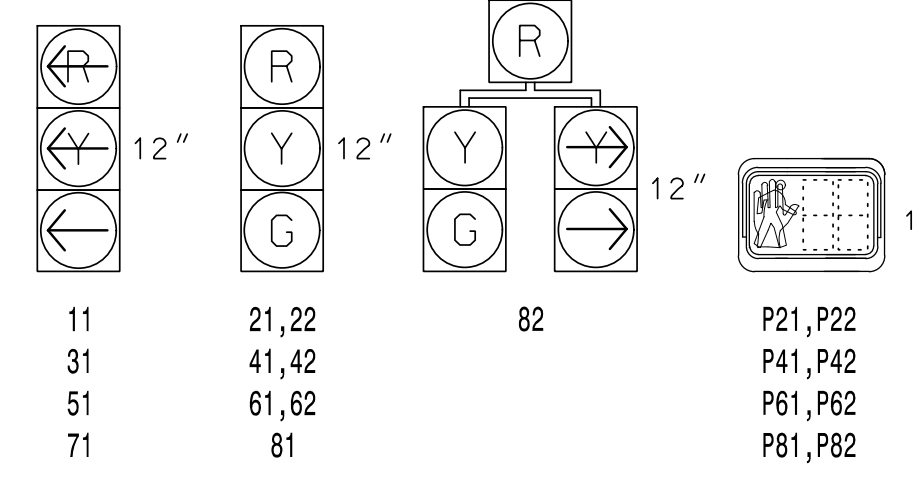


TABLE OF OPERATION

SIGNAL FACE	PHASE							
	Ø 1+5	Ø 1+6	Ø 2+5	Ø 2+6	Ø 3+7	Ø 3+8	Ø 4+7	Ø 4+8
11	←	←	←	←	←	←	←	←
21,22	R	R	G	G	R	R	R	R
31	←	←	←	←	←	←	←	←
41,42	R	R	R	R	R	R	G	G
51	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	R	G
71	←	←	←	←	←	←	←	←
81	R	R	R	R	R	R	G	G
82	R	R	R	R	R	R	G	G
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	DW	DW	W	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	DW	W	DW	DRK

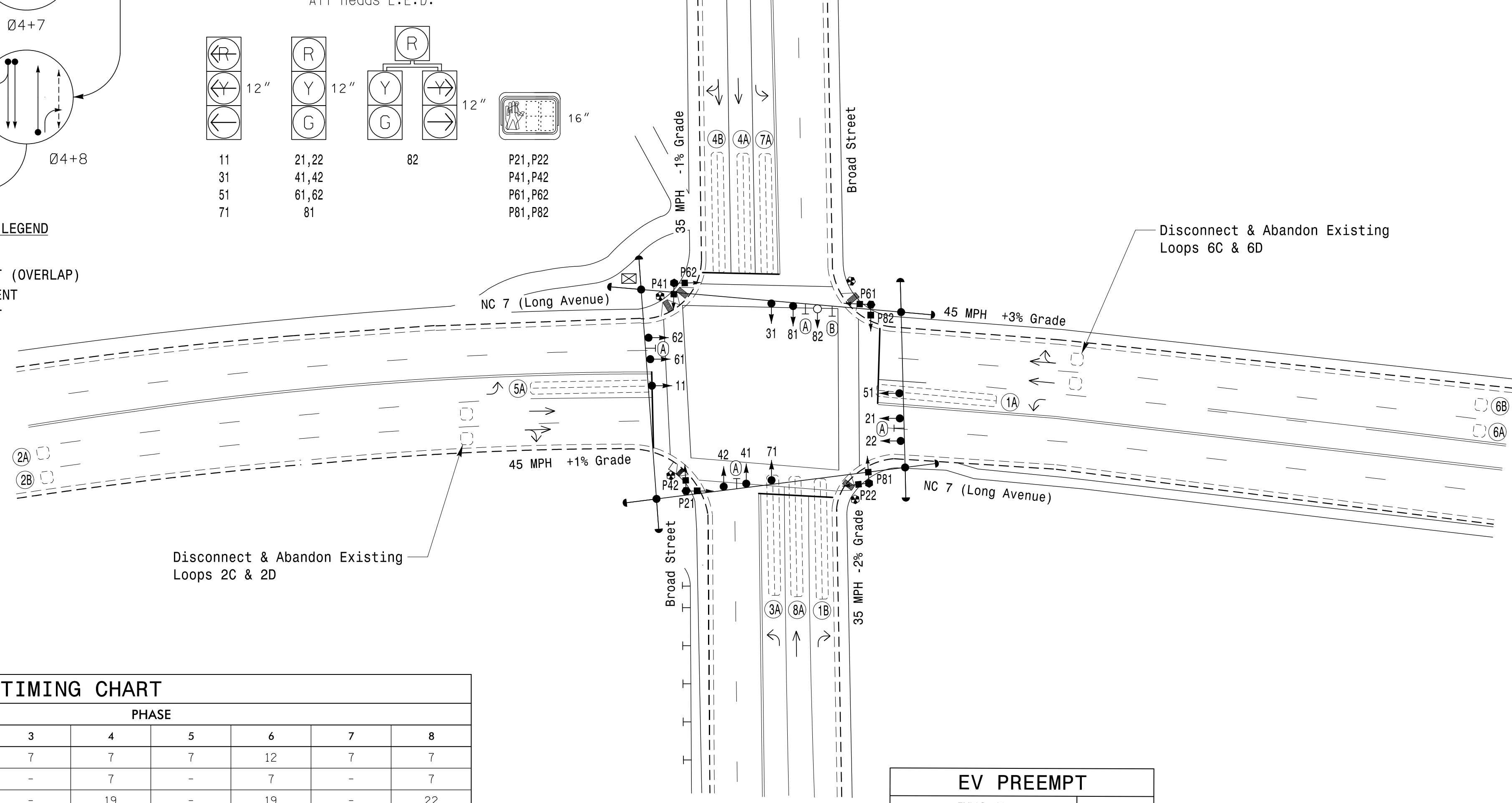
DETECTOR INSTALLATION CHART

LOOP	DETECTOR			PROGRAMMING								
	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X60	0	2-4-2	-	1	Yes	-	3	-	N	-	X
1B	6X60	+10	2-4-2	-	1	Yes	-	15	-	N	-	X
2A	6X6	300	EXIST	-	2	Yes	-	-	-	X	N	-
2B	6X6	300	EXIST	-	2	Yes	-	-	-	X	N	-
3A	6X60	+10	2-4-2	-	3	Yes	-	3	-	N	-	X
4A	6X60	0	2-4-2	-	4	Yes	-	-	-	N	-	X
4B	6X60	0	2-4-2	-	4	Yes	-	10	-	N	-	X
5A	6X60	0	2-4-2	-	5	Yes	-	3	-	N	-	X
6A	6X6	300	EXIST	-	6	Yes	-	-	-	X	N	-
6B	6X6	300	EXIST	-	6	Yes	-	-	-	X	N	-
7A	6X60	0	2-4-2	-	7	Yes	-	3	-	N	-	X
8A	6X60	+10	2-4-2	-	8	Yes	-	-	-	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.
- 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.
- Disconnect and abandon existing loops 2C, 2D, 6C, & 6D.
- Existing loop 8B has been relabeled to 1B.
- Reconnect lead-in cable to separate loops 2A, 2B, 6A, & 6B, as shown.
- Install new cabinet on the existing cabinet foundation.
- Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
- All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- City of system data:
Controller Asset #0923.



TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	12	7	7	7	12	7	7
Walk *	-	7	-	7	-	7	-	7
Ped Clear	-	19	-	19	-	19	-	22
Veh. Extension *	2.0	6.0	1.0	1.0	1.0	6.0	1.0	1.0
Max 1 *	15	45	15	25	15	45	15	25
Yellow	3.0	4.4	3.0	3.9	3.0	4.3	3.0	4.0
Red Clear	2.6	1.5	2.8	3.9	2.8	1.6	2.8	1.9
Red Revert	2.0	2.0	2.0	2.0	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 *	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	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.

EV PREEMPT

FUNCTION	PRE 3
Exit Phase(s)	2+6
Preempt Override	OFF
Delay Time	0
Ped Clear Through Yellow	Y
Terminate Phases	N
Entrance Walk	1
Entrance Ped Clear	255*
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	● → N/A
○ → Modified Signal Head	○ → N/A
□ → Pedestrian Signal Head With Push Button & Sign	□ → N/A
⊕ → Type I Pushbutton Post With Sign	⊕ → N/A
○ → Type II Signal Pedestal	○ → N/A
○ → Signal Pole with Guy	○ → N/A
○ → Signal Pole with Sidewalk Guy	○ → N/A
N/A → Guardrail	— → N/A
⊗ → Inductive Loop Detector	⊗ → N/A
□ → Controller & Cabinet Junction Box	□ → N/A
--- → 2-in Underground Conduit	--- → N/A
N/A → Right of Way	--- → N/A
→ → Directional Arrow	→ → N/A
(A) → Street Name Sign (D3-1)	(A) → N/A
(B) → Right Turn "ONLY" Sign (R3-5)	(B) → 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

NC 7 (Long Avenue) at Broad Street

Division 12 Gaston County Gastonia

PLAN DATE: May 2021 REVIEWED BY: SL Phillips
PREPARED BY: CF Davis REVIEWED BY: KP Baumann

REVISIONS: _____ INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Seal of North Carolina Professional Engineer
K. P. BAUMANN
044434

Disciplined by: _____
DATE: 3/11/2022
SIGNATURE: _____
DATE: _____
SIC. INVENTORY NO. 12-0923

3/9/2022 11:15:42 AM Dantellie.Curr1 \\s01\my-horn.com\SE-RAL\MRAL_TPIDR_LTS\011036569_Gastonia Signal System9_Signal\SW4 - Signal Design\120923-2021.dgn