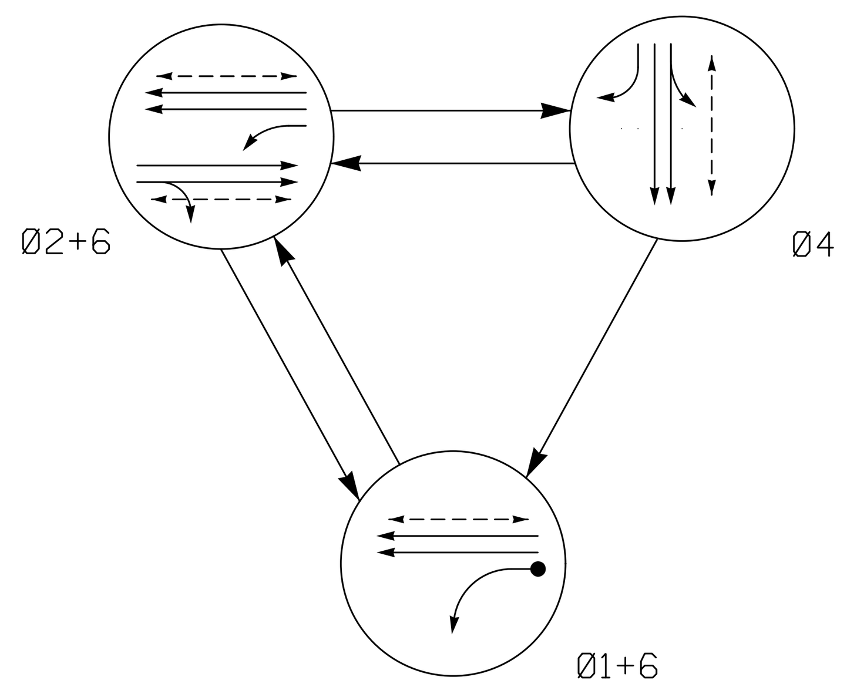
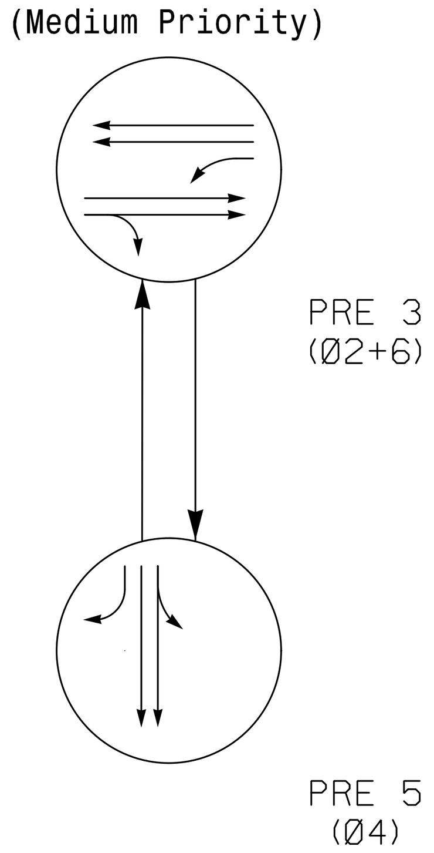
PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.14.0

DEFAULT PHASING DIAGRAM



DEFAULT EV PREEMPT PHASES

(Medium Priority)



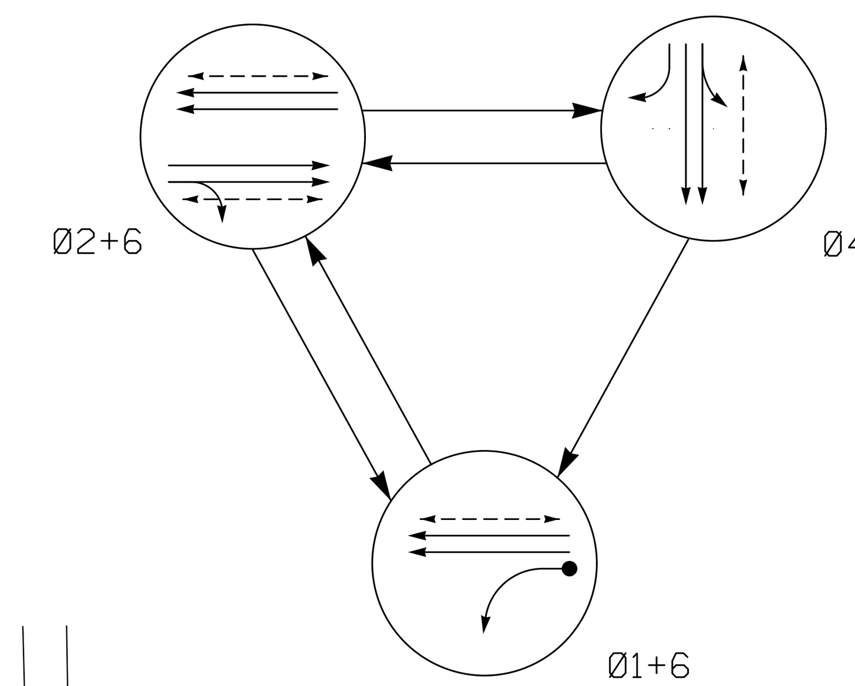
PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT PHASING TABLE OF OPERATION

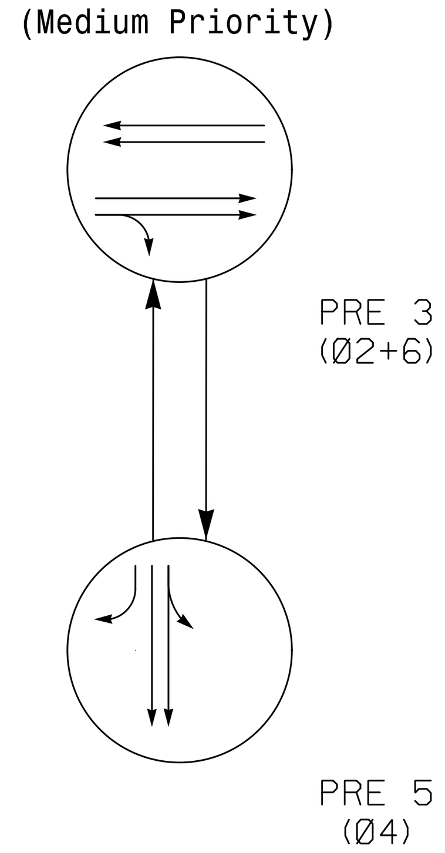
SIGNAL FACE	PHASE Ø1+6	Ø2+6	Ø4	PRE 3	PRE 5	FLASH
11	←	←F/Y	←R	←F/Y	←R	←Y
21, 22	R	G	R	G	R	Y
41, 42	R	R	G	R	G	R
61, 62	G	G	R	G	R	Y
P21, P22	DW	W	DW	DW	DW	DRK
P41, P42	DW	DW	W	DW	DW	DRK
P61, P62	W	W	DW	DW	DW	DRK

ALTERNATE PHASING DIAGRAM



ALTERNATE EV PREEMPT PHASES

(Medium Priority)



ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+6	Ø2+6	Ø4	PRE 3	PRE 5	FLASH
11	←	←R	←R	←R	←R	←Y
21, 22	R	G	R	G	R	Y
41, 42	R	R	G	R	G	R
61, 62	G	G	R	G	R	Y
P21, P22	DW	W	DW	DW	DW	DRK
P41, P42	DW	DW	W	DW	DW	DRK
P61, P62	W	W	DW	DW	DW	DRK

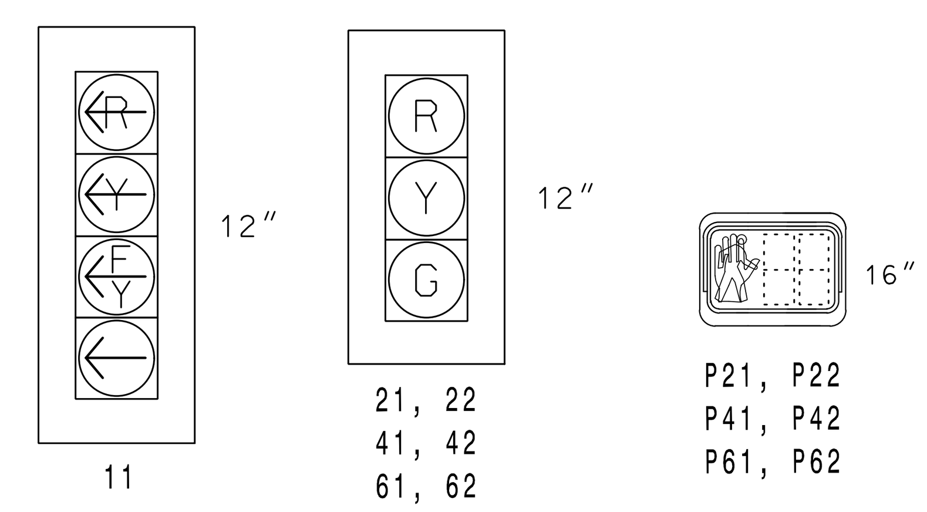
3 Phase
Semi-Actuated
w/ Alternate Phasing Operation
and Emergency Vehicle Preemption
Gastonia Signal System

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. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
7. Pavement markings are existing.
8. The City Engineer or their representative will determine the hours of use for each phasing plan.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
10. Install new cabinet on the existing cabinet foundation.
11. All new cabinets and base extenders shall be black in color. See Project Special sProvisions for details.
12. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
13. All proposed pedestrian signal heads shall be black in color. See Project Special Provisions for details.
14. All proposed pedestrian pedestals and pushbutton posts shall be black in color. See Project Special Provisions for details.
15. City system data:
    Controller Asset: #0038

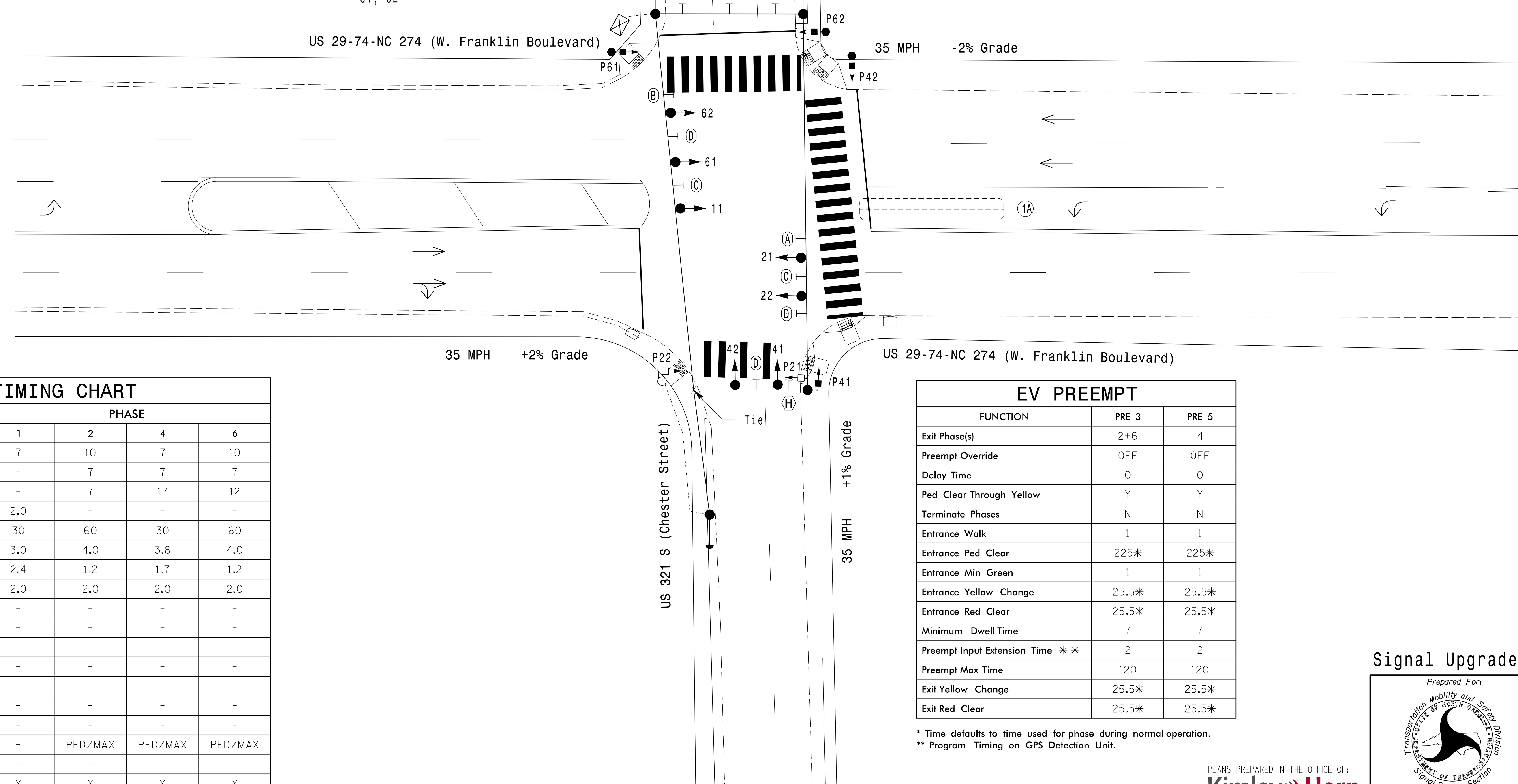
SIGNAL FACE I.D.

All Heads L.E.D.
All heads have backplates with reflective borders



DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	+5	2-4-2	-	1	Yes	-	-	-	N	-	X



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Type II Signal Pedestal	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	
A	No Left Turn Sign (R3-2)	A
B	No Right Turn Sign (R3-1)	B
C	One Way Sign (R6-1)	C
D	Street Name Sign (D3-1)	D
E	Left / Thru Sign (R3-6)	E
F	Thru Movement Only (R3-5a)	F
G	Right Turn Only Sign (R3-5R)	G
H	Left "TURNING VEHICLES" Yield "TO" Pedestrians (R10-15L)	H

TIMING CHART

FEATURE	PHASE 1	2	4	6
Min Green *	7	10	7	10
Walk *	-	7	7	7
Ped Clear	-	7	17	12
Veh. Extension *	2.0	-	-	-
Max 1 *	30	60	30	60
Yellow	3.0	4.0	3.8	4.0
Red Clear	2.4	1.2	1.7	1.2
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds /Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	-	-	-	-
Recall Position	-	PED/MAX	PED/MAX	PED/MAX
Dual Entry	-	-	-	-
Simultaneous Gap	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	PRE 5
Exit Phase(s)	2+6	4
Preempt Override	OFF	OFF
Delay Time	0	0
Ped Clear Through Yellow	Y	Y
Terminate Phases	N	N
Entrance Walk	1	1
Entrance Ped Clear	225*	225*
Entrance Min Green	1	1
Entrance Yellow Change	25.5*	25.5*
Entrance Red Clear	25.5*	25.5*
Minimum Dwell Time	7	7
Preempt Input Extension Time **	2	2
Preempt Max Time	120	120
Exit Yellow Change	25.5*	25.5*
Exit Red Clear	25.5*	25.5*

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

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

Signal Upgrade

Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 29-74-NC 274 (W. Franklin Boulevard) at US 321 S (Chester Street)

Division 12 Gaston County Gastonia

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

SCALE 0 20 1"=20'

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 044434 ENGINEER KEVIN P. BAUMANN

DocuSigned by:
5DC709A86BCB447...
SIGNATURE 3/11/2022 DATE

SIG. INVENTORY NO. 12-0038