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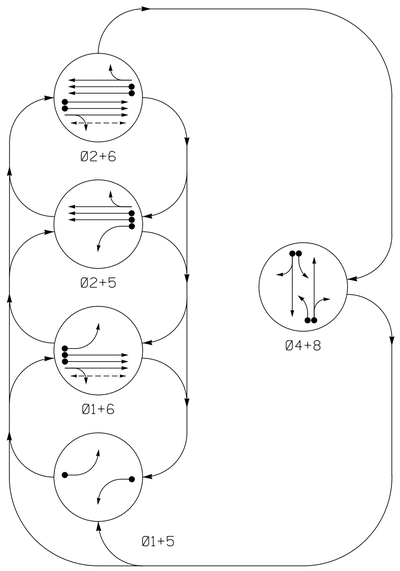
PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.85.0

PHASING DIAGRAM

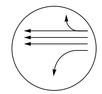


PHASING DIAGRAM DETECTION LEGEND

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

EV PREEMPT PHASES

(Medium Priority)



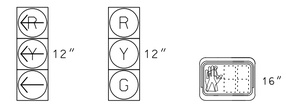
PRE 3
(Ø2+5)

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø4+8	PRE 3	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
21,22,23	R	R	G	G	R	G	Y
41,42	R	R	R	R	G	R	R
51	←	~~R~~	←	~~R~~	~~R~~	←	~~R~~
61,62,63	R	G	R	G	R	R	Y
81,82	R	R	R	R	G	R	R
P61,P62	DW	W	DW	W	DW	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



11
51

21,22,23
41,42
61,62,63
81,82

P61,P62

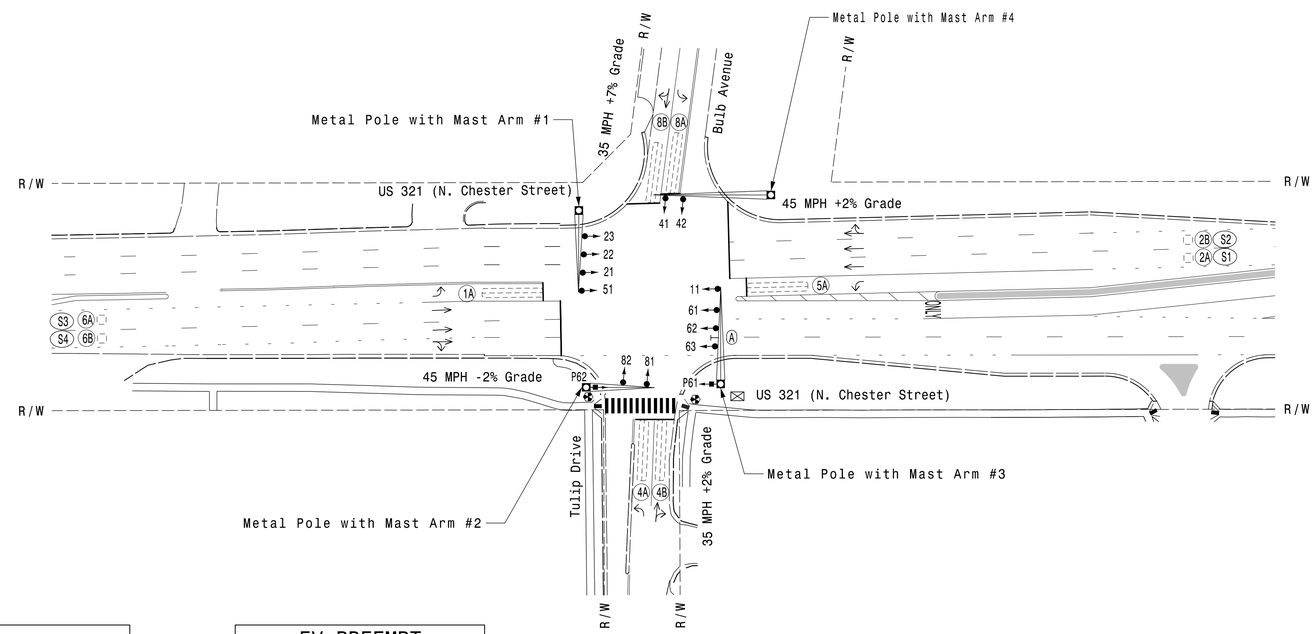
DETECTOR INSTALLATION CHART

DETECTOR: LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING: PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	-	1	Yes	-	-	-	N	-	X
2A/S1	6X6	300	EXIST	-	2	Yes	-	-	X	N	X	X
2B/S2	6X6	300	EXIST	-	2	Yes	-	-	X	N	X	X
4A	6X40	0	2-4-2	-	4	Yes	-	-	-	N	-	X
4B	6X40	0	2-4-2	-	4	Yes	-	-	-	N	-	X
5A	6X40	0	2-4-2	-	5	Yes	-	-	-	N	-	X
6A/S3	6X6	300	EXIST	-	6	Yes	-	-	X	N	X	X
6B/S4	6X6	300	EXIST	-	6	Yes	-	-	X	N	X	X
8A	6X40	0	2-4-2	-	8	Yes	-	-	-	N	-	X
8B	6X40	0	2-4-2	-	8	Yes	-	-	-	N	-	X

5 Phase
Fully Actuated
w/ 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 and/or phase 5 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. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Pavement markings are existing.
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. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
12. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
13. City of system data:
    Controller Asset #0922.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	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	
	Metal Pole with Mastarm	
	Type I Pushbutton Post	
	"DO NOT BLOCK INTERSECTION" Sign (R10-7)	

TIMING CHART

FEATURE	PHASE 1	2	4	5	6	8
Min Green *	7	12	7	7	12	7
Walk *	-	-	-	-	4	-
Ped Clear	-	-	-	-	12	-
Veh. Extension *	2.0	6.0	2.0	3.0	6.0	2.0
Max 1 *	20	90	25	20	90	25
Yellow	3.0	4.3	3.7	3.0	4.7	3.7
Red Clear	3.3	1.2	2.7	3.1	1.4	2.7
Red Revert	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	-	-	X	-	-	X
Simultaneous Gap	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

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

SCALE 0 50
1"=50'

US 321 (N. Chester Street)
at
Bulb Avenue / Tulip Drive

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

NORTH CAROLINA PROFESSIONAL SEAL 044434 ENGINEER KEVIN P. BAUMANN

DocuSigned by:
SIGNATURE 3/11/2022 DATE

SIG. INVENTORY NO. 12-0922

3/9/2022 11:15:39 AM Danielle.Curri ***kimley-horn.com*SE_RAL1*RAL_TPTO*_ITS*011036569 Gastonia Signal System*3 Signals*S4 - Signal Design*E120922-2021.dgn