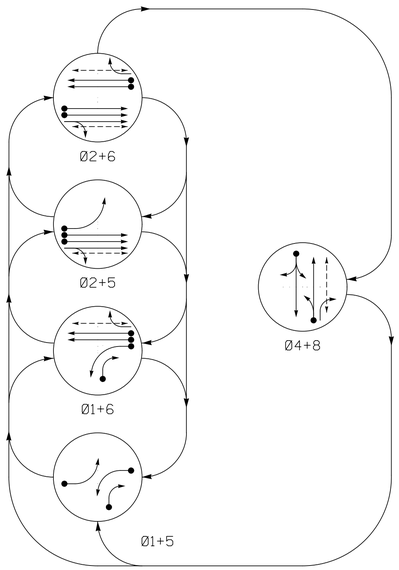
DocuSign Envelope ID: EE0A7A97-01F5-4BA9-9D2A-EBB04FC9D7E3

PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.24.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

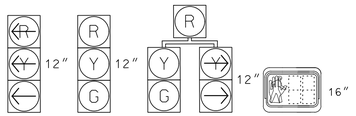
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø4+8	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~
21, 22	R	R	G	G	R	Y
41, 42	R	R	R	R	G	R
51	←	~~R~~	←	~~R~~	~~R~~	~~R~~
61, 62	R	G	R	G	R	Y
81	R	R	R	R	G	R
82	R/←	R/→	R	R	G	R
P21,P22	DW	DW	W	W	DW	DRK
P61,P62	DW	W	DW	W	DW	DRK
P81,P82	DW	DW	DW	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



11
51

21, 22
41, 42
61, 62
81

82

P21, P22
P61, P62
P81, P82

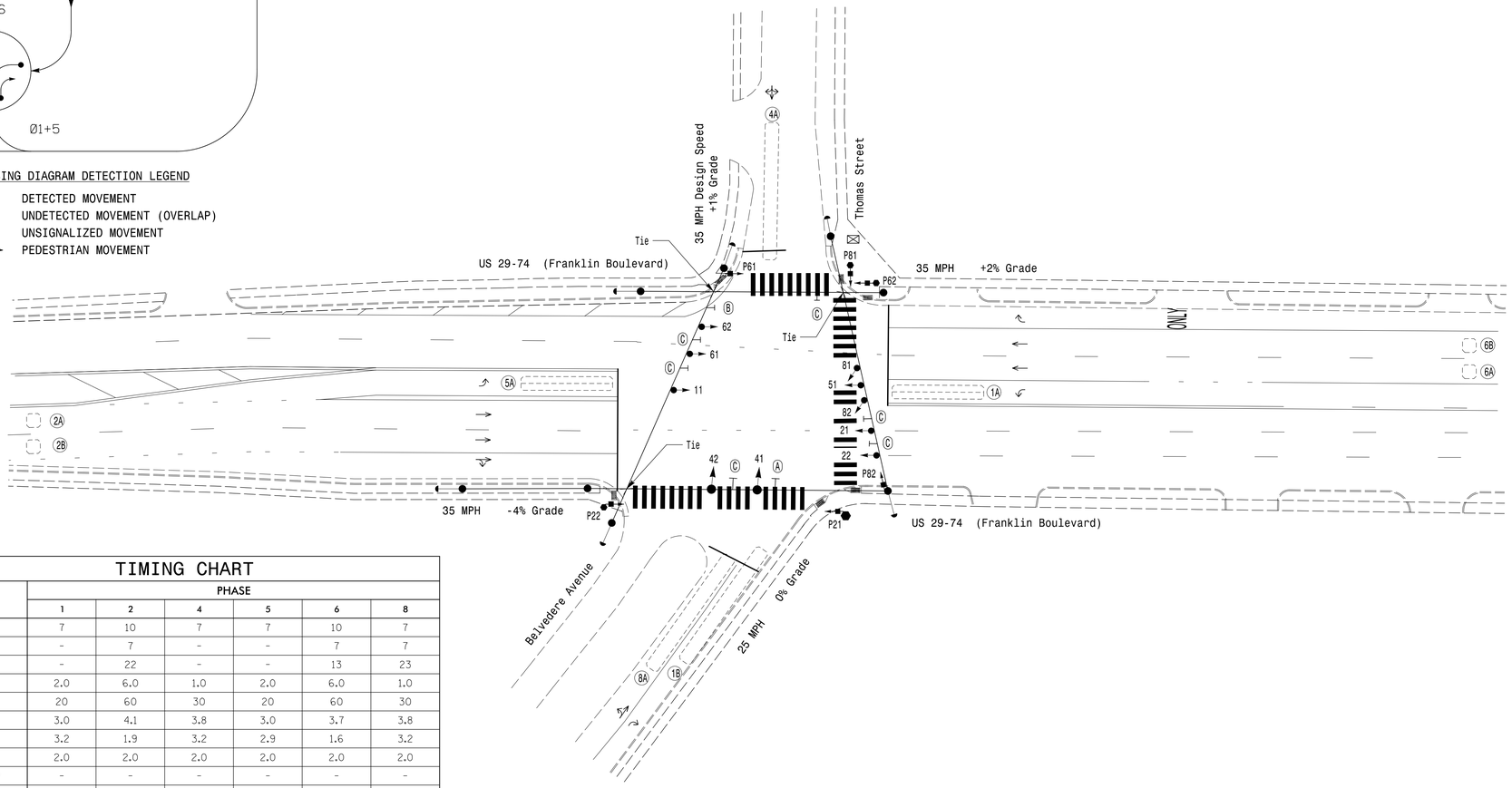
DETECTOR INSTALLATION CHART

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
1B	6X60	+5	EXIST	-	1	Yes	-	-	-	N	-	X
2A	6X6	250	EXIST	-	2	Yes	-	-	X	N	-	X
2B	6X6	250	EXIST	-	2	Yes	-	-	X	N	-	X
4A	6X60	+5	EXIST	-	4	Yes	-	-	-	N	-	X
5A	6X40	0	2-4-2	-	5	Yes	-	-	-	N	-	X
6A	6X6	250	EXIST	-	6	Yes	-	-	X	N	-	X
6B	6X6	250	EXIST	-	6	Yes	-	-	X	N	-	X
8A	6X60	0	EXIST	-	8	Yes	-	-	-	N	-	X

5 Phase
Fully Actuated
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. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Pavement markings are existing.
10. Relabel existing loop 8B as 1B.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
12. Install new cabinet on the existing cabinet foundation.
13. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
14. City system data:
    Controller Asset #0048



TIMING CHART

FEATURE	PHASE 1	2	4	5	6	8
Min Green *	7	10	7	7	10	7
Walk *	-	7	-	-	7	7
Ped Clear	-	22	-	-	13	23
Veh. Extension *	2.0	6.0	1.0	2.0	6.0	1.0
Max 1 *	20	60	30	20	60	30
Yellow	3.0	4.1	3.8	3.0	3.7	3.8
Red Clear	3.2	1.9	3.2	2.9	1.6	3.2
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 *	-	29	-	-	29	-
Time Before Reduction *	-	15	-	-	15	-
Time To Reduce *	-	30	-	-	30	-
Minimum Gap	-	3.5	-	-	3.5	-
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.

LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
□↓	Pedestrian Signal Head With Push Button & Sign	■↓
⬡	Type II Signal Pedestal	⬢
○—	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	→
Ⓐ	"LEFT TURN" - "YIELD" Combination Sign (R1-2)	Ⓐ
Ⓑ	Right Arrow "ONLY" Sign (R3-5R)	Ⓑ
Ⓒ	Street Name Sign (D3-1)	Ⓒ

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
State of North Carolina Department of Transportation
Traffic Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 29-74 (Franklin Boulevard) at Thomas Street/Belvedere Avenue

Division 12 Gaston County Gastonia

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

SCALE 0 30 1"=30'

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. 12-0048

3/9/2022 11:12:14 AM Danielle.Curri
\\kimley-horn.com\SE_RAL1\RAL_TPTO_ITS\071036569 Gastonia Signal Systems\3 Signals\54 - Signal Design\4120048-2021.dgn