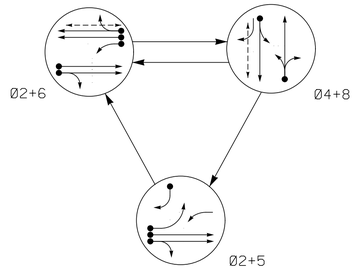
PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.46.0

3 Phase Fully Actuated w/ Emergency Vehicle Preemption Gastonia Signal System

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

EV PREEMPT PHASES

(Medium Priority)

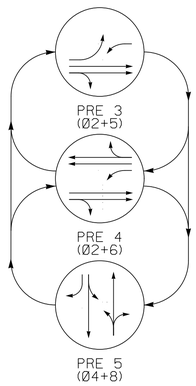


TABLE OF OPERATION

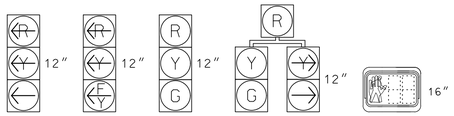
SIGNAL FACE	PHASE Ø2+5	Ø2+6	Ø4+8	PRE3	PRE4	PRE5	FLASH
21, 22	G	G	R	G	G	R	Y
41	R	R	G	R	R	G	R
42	R→	R	G	R	R	G	R
51	←R	←R	←R	←	←R	←R	←R
61	←Y	←Y	←R	←Y	←Y	←R	←Y
62, 63	R	G	R	R	G	R	Y
81, 82	R	R	G	R	R	G	R
P41, P42	DW	DW	W	DW	DW	DW	DRK
P61, P62	DW	W	DW	DW	DW	DW	DRK

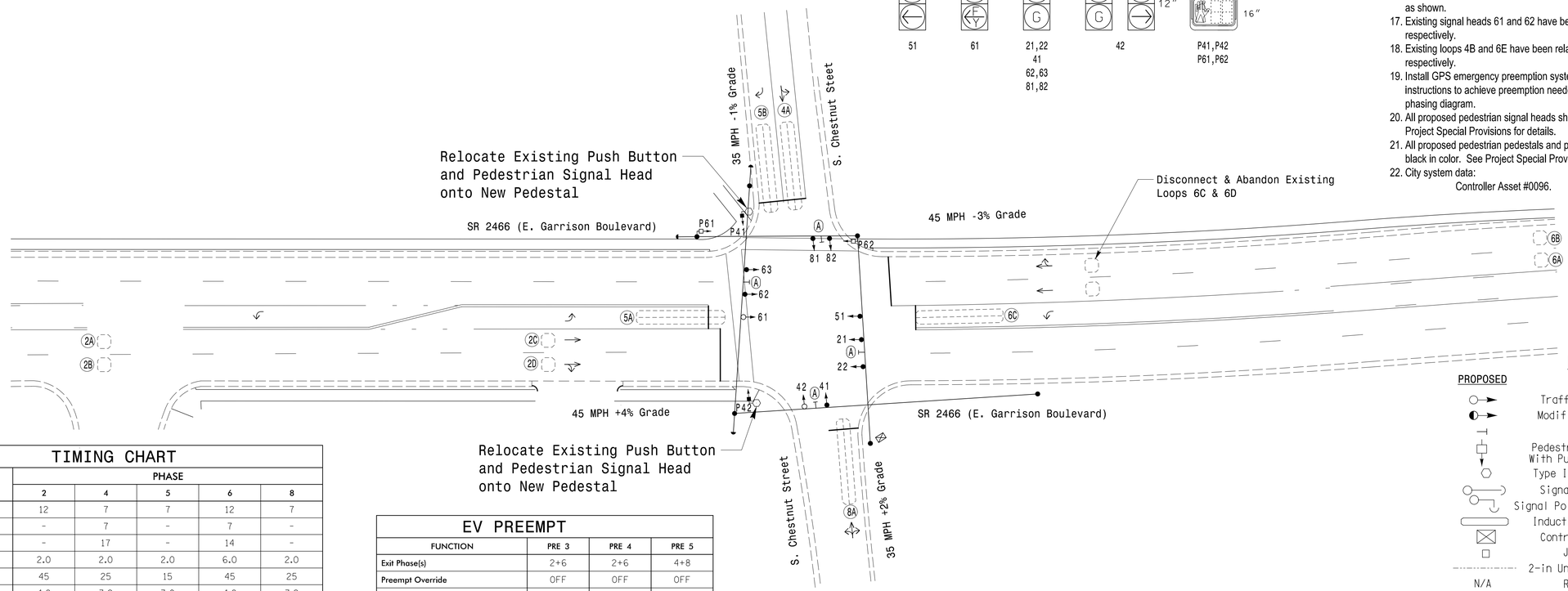
DETECTOR INSTALLATION CHART

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
2A	6X6	300	EXIST	-	2	Yes	1.8	-	-	N	-	X
2B	6X6	300	EXIST	-	2	Yes	1.8	-	-	N	-	X
2C	6X6	80	EXIST	-	2	Yes	-	-	-	N	-	X
2D	6X6	80	EXIST	-	2	Yes	-	-	-	N	-	X
4A	6X40	+5	2-4-2	-	4	Yes	-	3	-	N	-	X
5A	6X40	+5	2-4-2	-	5	Yes	-	-	-	N	-	X
5B	6X40	+5	2-4-2	-	5	Yes	-	5	-	N	-	X
6A	6X6	300	EXIST	-	6	Yes	-	-	X	N	-	X
6B	6X6	300	EXIST	-	6	Yes	-	-	X	N	-	X
6C	6X40	0	2-4-2	-	6	Yes	-	3	-	G	-	X
8A	6X40	+5	2-4-2	-	8	Yes	-	-	-	N	-	X

SIGNAL FACE I.D.

All Heads L.E.D.





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	→
Ⓐ	Street Name Sign (D3-1)	Ⓐ

TIMING CHART

FEATURE	PHASE 2	4	5	6	8
Min Green *	12	7	7	12	7
Walk *	-	7	-	7	-
Ped Clear	-	17	-	14	-
Veh. Extension *	2.0	2.0	2.0	6.0	2.0
Max 1 *	45	25	15	45	25
Yellow	4.8	3.9	3.0	4.8	3.9
Red Clear	1.2	2.2	2.3	1.2	2.2
Red Revert	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-	-
Seconds /Actuation *	-	-	-	1.5	-
Max Initial *	-	-	-	34	-
Time Before Reduction *	-	-	-	15	-
Time To Reduce *	-	-	-	30	-
Minimum Gap	-	-	-	3.0	-
Locking Detector	X	-	-	X	-
Recall Position	MIN RECALL	-	-	MIN RECALL	-
Dual Entry	-	X	-	-	X
Simultaneous Gap	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	PRE 4	PRE 5
Exit Phase(s)	2+6	2+6	4+8
Preempt Override	OFF	OFF	OFF
Delay Time	0	0	0
Ped Clear Through Yellow	Y	Y	Y
Terminate Phases	N	N	N
Entrance Walk	1	1	1
Entrance Ped Clear	255*	255*	255*
Entrance Min Green	1	1	1
Entrance Yellow Change	25.5*	25.5*	25.5*
Entrance Red Clear	25.5*	25.5*	25.5*
Minimum Dwell Time	7	7	7
Preempt Input Extension Time **	2	2	2
Preempt Max Time	120	120	120
Exit Yellow Change	25.5*	25.5*	25.5*
Exit Red Clear	25.5*	25.5*	25.5*

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

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 5 may be lagged.
4. Reposition existing signal heads numbered 62 and 63.
5. Set all detector units to presence mode.
6. 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.
7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
10. Remove existing "Left Turn Only" sign-(R3-5L).
11. Pavement markings are existing.
12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
13. Disconnect and abandon existing loops 6C and 6D.
14. Install new cabinet on the existing cabinet foundation.
15. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
16. Reconnect lead-in cable to separate loops 2A, 2B, 2C, 2D, 6A & 6B, as shown.
17. Existing signal heads 61 and 62 have been relabeled to 62 and 63, respectively.
18. Existing loops 4B and 6E have been relabeled to 5B and 6C, respectively.
19. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
20. All proposed pedestrian signal heads shall be black in color. See Project Special Provisions for details.
21. All proposed pedestrian pedestals and pushbutton posts shall be black in color. See Project Special Provisions for details.
22. City system data:
    Controller Asset #0096.

Signal Upgrade

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

SR 2466 (E. Garrison Boulevard) at S. Chestnut Street

Division 12 | Gaston County | Gastonia

PLAN DATE: May 2021 | REVIEWED BY: SL Phillips
PREPARED BY: DM Curri | REVIEWED BY: KP Baumann

REVISIONS	INIT.	DATE

SCALE: 0 30 — 1"=30'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 044434 ENGINEER KEVIN P. BAUMANN

DocuSigned by: 3/11/2022
SIGNATURE DATE

SIG. INVENTORY NO. 12-0096

PLANS PREPARED IN THE OFFICE OF:
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