PROJECT REFERENCE NO.	SHEET NO.
HS-2005K	Sig. 2.0

6 Phase
Fully Actuated
(Raleigh Signal System)

DEFAULT PHASING DIAGRAM

ALTERNATE PHASING DIAGRAM

PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03	04	FLASH
11	←	←	~~F Y~~	~~F Y~~	~~R~~	~~R~~	~~Y~~
21, 22, 23	R	R	G	G	R	R	Y
31	R	R	R	R	G ←	R	R
32	R	R	R	R	G	R	R
41	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	←	~~R~~
42	R	R	R	R	R	G ←	R
43	R	R	R	R	R	G	R
51	←	~~F Y~~	←	~~F Y~~	~~R~~	~~R~~	~~Y~~
61, 62, 63	R	G	R	G	R	R	Y
P21, P22	DW	DW	W	W	DW	DW	DRK
P31, P32	DW	DW	DW	DW	W	DW	DRK
P41, P42	DW	DW	DW	DW	DW	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03	04	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~	~~Y~~
21, 22, 23	R	R	G	G	R	R	Y
31	R	R	R	R	G ←	R	R
32	R	R	R	R	G	R	R
41	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	←	~~R~~
42	R	R	R	R	R	G ←	R
43	R	R	R	R	R	G	R
51	←	~~R~~	←	~~R~~	~~R~~	~~R~~	~~Y~~
61, 62, 63	R	G	R	G	R	R	Y
P21, P22	DW	DW	W	W	DW	DW	DRK
P31, P32	DW	DW	DW	DW	W	DW	DRK
P41, P42	DW	DW	DW	DW	DW	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21, P22	X	-	Walk	Credit Union. Walk sign is on to cross Credit Union.
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Credit Union.
P31	-	X	Walk	(Rapid Ticks)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Louisburg.
P32	X	-	Walk	Louisburg. Walk sign is on to cross Louisburg.
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Louisburg.
P41	X	-	Walk	Louisburg. Walk sign is on to cross Louisburg.
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Louisburg.
P42	-	X	Walk	(Rapid Ticks)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Louisburg.
P61, P62	-	X	Walk	(Rapid Ticks)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Calvary.

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
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. The order of phase 3 and phase 4 may be reversed.
5. Reposition existing signal heads numbered 21, 22, 61, and 62.
6. Set all detector units to presence mode.
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. This intersection features accessible pedestrian signals utilizing percussive tone walk indications and/or speech messages.
11. Install backplates for signal heads numbered 11 and 63.
12. Pavement markings are existing unless otherwise noted.
13. Restripe existing crosswalks for high visibility markings.
14. The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
15. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
16. Run separate lead-in to loops 2A, 2B, 2C, 6A, 6B, and 6C.

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	
	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	
	Type I Pushbutton Post	
	Type II Signal Pedestal	
Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
Ⓑ	Dual Turn and Through Arrows Sign	Ⓑ
Ⓒ	"STOP" Sign (R1-1)	Ⓒ

SE-PAC 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green *	7	12	7	7	7	12
Passage Gap *	2.0	6.0	2.0	2.0	2.0	6.0
Maximum Green *	15	90	20	40	20	90
Yellow Change	3.0	4.6	3.0	3.9	3.0	4.6
Red Clear	2.8	2.5	3.9	2.7	3.1	2.5
Advance Walk *	-	7	4	6	-	4
Walk *	-	7	7	7	-	7
Pedestrian Clear	-	15	29	28	-	9
Added Initial *	-	2.0	-	-	-	2.0
Maximum Initial *	-	34	-	-	-	34
Time Before Reduction *	-	15	-	-	-	15
Time To Reduce *	-	20	-	-	-	20
Minimum Gap	-	3.2	-	-	-	3.2
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	NON-LOCK	LOCK	NON-LOCK	NON-LOCK	NON-LOCK	LOCK
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* 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.

SE-PAC 2070 LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS						DETECTOR PROGRAMMING																
							TIMING		OPERATION MODE											STATUS	
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	ASSIGNED PHASE	DELAY	EXTEND (STRETCH)	0 VEHICLE	1 PEDESTRIAN	2 1 CALL	3 STOP A	4 STOP B	5 PROTTER LEFT	6 PROTTER THROUGH	7 AND	SWITCH	SYSTEM LOOPS	NEW	EXISTING
1A	6X40	2-4-2	0	-	X	1	5 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
2A	6X6	EXIST	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
2B	6X6	EXIST	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
2C	6X6	EXIST	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
3A	6X40	2-4-2	0	-	X	3	3 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
3B	6X40	2-4-2	0	-	X	3	10 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
4A	6X40	2-4-2	0	-	X	4	3 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
4B	6X40	2-4-2	0	-	X	4	10 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
5A	6X40	2-4-2	0	-	X	5	5 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
6A	6X6	EXIST	300	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
6B	6X6	EXIST	300	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
6C	6X6	EXIST	300	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-

This plan supersedes the plan signed and sealed on 10/7/22.

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 401 (Louisburg Road) at Calvary Drive and State Employee's Credit Union

Division 5 Wake County Raleigh

PLAN DATE: February 2024 REVIEWED BY:
PREPARED BY: J.A. Lohr REVIEWED BY:

SCALE 1"=50' (0 – 50)

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA

DocuSigned by: 02/27/2024
DATE
SIG. INVENTORY NO. 05-1902

27-FEB-2024 14:17
*#Mid#Raleigh01#Groups-TEC#ITSGSU#ITS Signals#Signal Design Section#Central Region#Div 5#HS-2005K#051902_sig_dsn_2024mmds.dgn
JALOHR