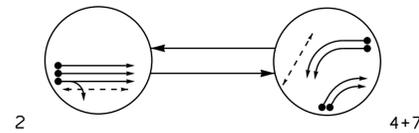


PHASING DIAGRAM



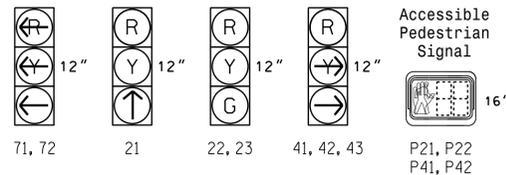
PHASING DIAGRAM DETECTION LEGEND
 ● DETECTED MOVEMENT
 ○ UNDETECTED MOVEMENT (OVERLAP)
 - - - UNSIGNALIZED MOVEMENT
 - - - PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE		
	2	4 + 7	FLASH
21	↑	R	R
22, 23	G	R	R
41, 42, 43	R	←	R
71, 72	←	←	←
P21, P22	W	DW	DRK
P41, P42	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



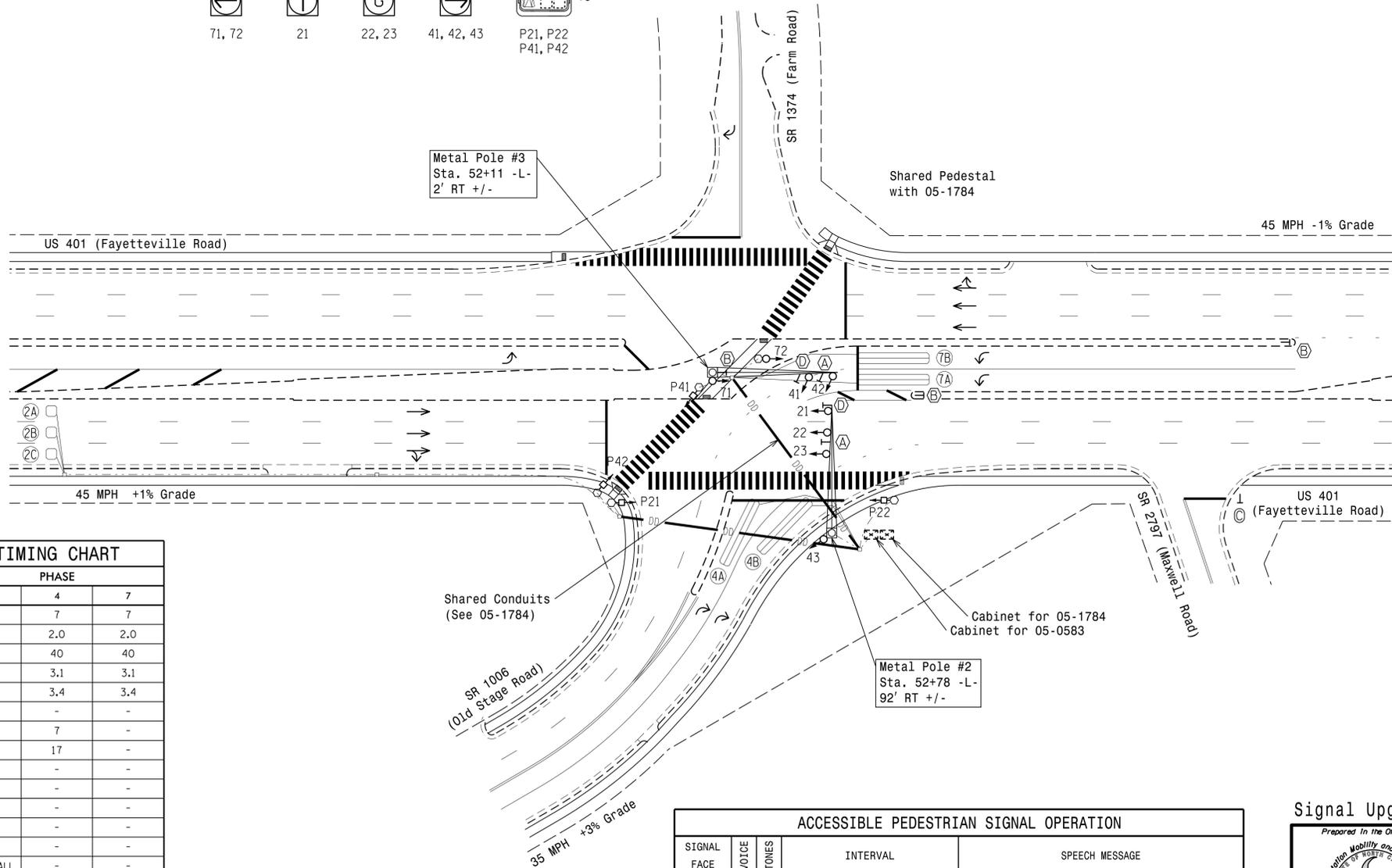
SE-PAC 2070 LOOP & DETECTOR UNIT INSTALLATION CHART

LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	DETECTOR PROGRAMMING												STATUS		
						ASSIGNED PHASE	TIMING		OPERATION MODE							SYSTEM	LOOPS		NEW	EXISTING
							DELAY	EXTEND (STRETCH)	VEHICLE	PEDESTRIAN	1 CALL	STOP A	STOP B	PROT/REF	PROT/REF LEFT					
2A	6X6	5	300	X	-	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	X	-	
2B	6X6	5	300	X	-	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	X	-	
2C	6X6	5	300	X	-	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	X	-	
4A	6X40	2-4-2	0	X	-	4	15.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	X	-	
4B	6X40	2-4-2	0	X	-	4	15.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	X	-	
7A	6X40	2-4-2	0	X	-	7	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	X	-	
7B	6X40	2-4-2	0	X	-	7	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	X	-	

2 Phase Fully Actuated (Raleigh Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- This intersection features accessible pedestrian signals utilizing percussive tone walk indications and/or speech messages.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



SE-PAC 2070 TIMING CHART

FEATURE	PHASE		
	2	4	7
Min Green *	12	7	7
Passage Gap *	6.0	2.0	2.0
Maximum Green *	90	40	40
Yellow Change	4.4	3.1	3.1
Red Clear	2.1	3.4	3.4
Advance Walk	7	-	-
Walk *	7	7	-
Pedestrian Clear	38	17	-
Added Initial *	1.0	-	-
Maximum Initial *	34	-	-
Time Before Reduction *	15	-	-
Time To Reduce *	30	-	-
Minimum Gap	3.0	-	-
Recall Mode	MIN RECALL	-	-
Vehicle Call Memory	LOCK	NON-LOCK	NON-LOCK
Dual Entry	-	ON	ON
Simultaneous Gap	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 2 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21, P22	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait, Wait to cross Old Stage.
P41, P42	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait, Wait to cross Fayetteville.

LEGEND

PROPOSED	EXISTING
○ → Traffic Signal Head	● → Traffic Signal Head
○ → Modified Signal Head	N/A
○ → Signal	○ → Signal
○ → Pedestrian Signal Head	○ → Pedestrian Signal Head
○ → Signal Pole with Guy	○ → Signal Pole with Guy
○ → Signal Pole with Sidewalk Guy	○ → Signal Pole with Sidewalk Guy
○ → Inductive Loop Detector	○ → Inductive Loop Detector
○ → Controller & Cabinet	○ → Controller & Cabinet
○ → Junction Box	○ → Junction Box
○ → 2-in Underground Conduit	○ → 2-in Underground Conduit
N/A → Right of Way	○ → Right of Way
○ → Directional Arrow	○ → Directional Arrow
○ → Metal Pole with Mastarm	○ → Metal Pole with Mastarm
○ → Type I Pushbutton Post	○ → Type I Pushbutton Post
○ → Type II Signal Pedestal	○ → Type II Signal Pedestal
○ → Directional Drill	N/A
N/A → Curb Ramp	○ → Curb Ramp
○ → Street Name Sign By Others (D3-1)	○ → Street Name Sign By Others (D3-1)
○ → No U-Turn Sign (R3-4)	○ → No U-Turn Sign (R3-4)
○ → "STOP" Sign (R1-1)	○ → "STOP" Sign (R1-1)
○ → No Left Turn Sign (R3-2)	○ → No Left Turn Sign (R3-2)

Signal Upgrade - Final Design

Prepared in the Offices of:
 Transportation Mobility and Safety Solutions
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 SIGNAL DESIGN SECTION

US 401 NB (Fayetteville Road) at SR 1006 (Old Stage Road)
 Division 5 Wake County Raleigh
 PLAN DATE: February 2025 REVIEWED BY:
 PREPARED BY: J.A. Lohr REVIEWED BY:
 REVISIONS: INIT. DATE

750 N. Greenfield Pkwy, Garner, NC 27529
 SCALE: 0 40
 1" = 40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 026486
 ROBERT J. ZILMEN
 DATE: 03/27/2025
 SIG. INVENTORY NO. 05-0583

22-MAY-2025 11:06
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