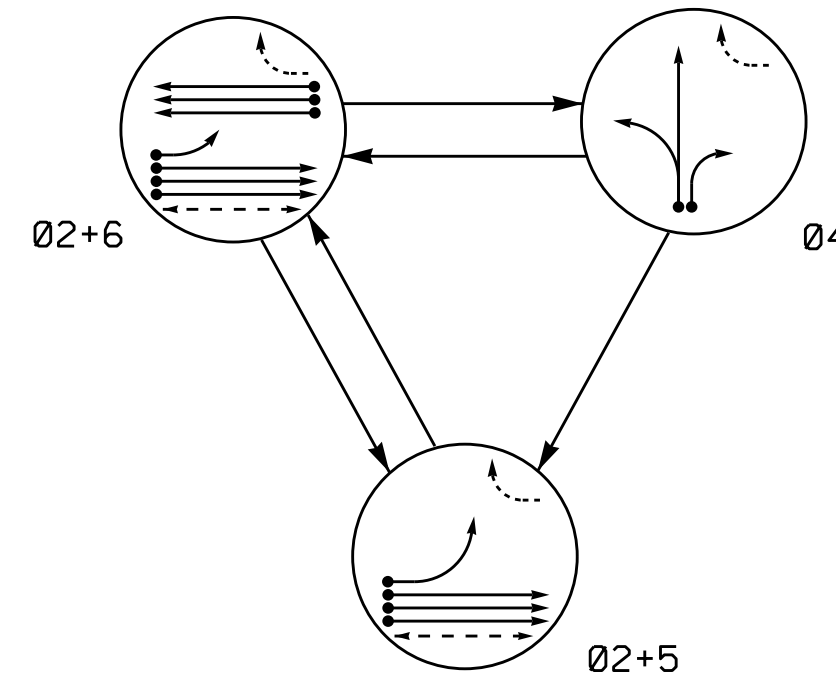
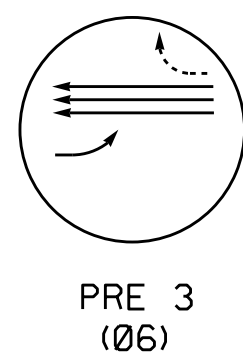


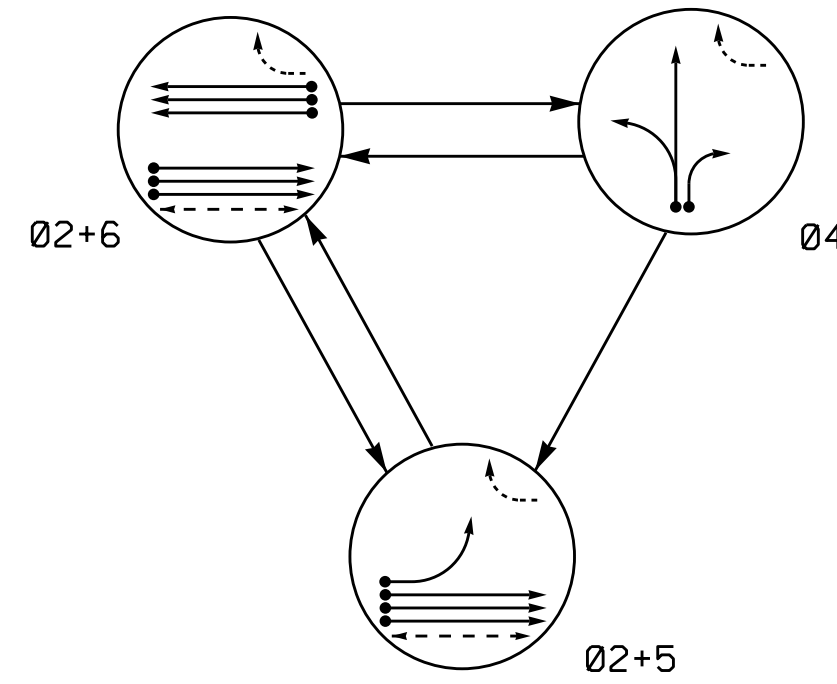
DEFAULT PHASING DIAGRAM



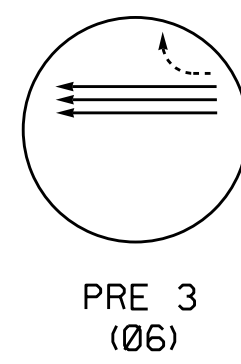
DEFAULT EV PREEMPT PHASES



ALTERNATE PHASING DIAGRAM



ALTERNATE EV PREEMPT PHASES



PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE				
	02+5	02+6	04	PFL3	FLASH
21, 22	↑	↑	R	R	Y
41, 42	R	R	G	R	R
51	←	←	←	←	←
61, 62	R	↑	R	↑	Y
P21, P22	W	W	DW	DW	DRK

SIGNAL FACE	PHASE				
	02+5	02+6	04	PFL3	FLASH
21, 22	↑	↑	R	R	Y
41, 42	R	R	G	R	R
51	←	←	←	←	←
61, 62	R	↑	R	↑	Y
P21, P22	W	W	DW	DW	DRK

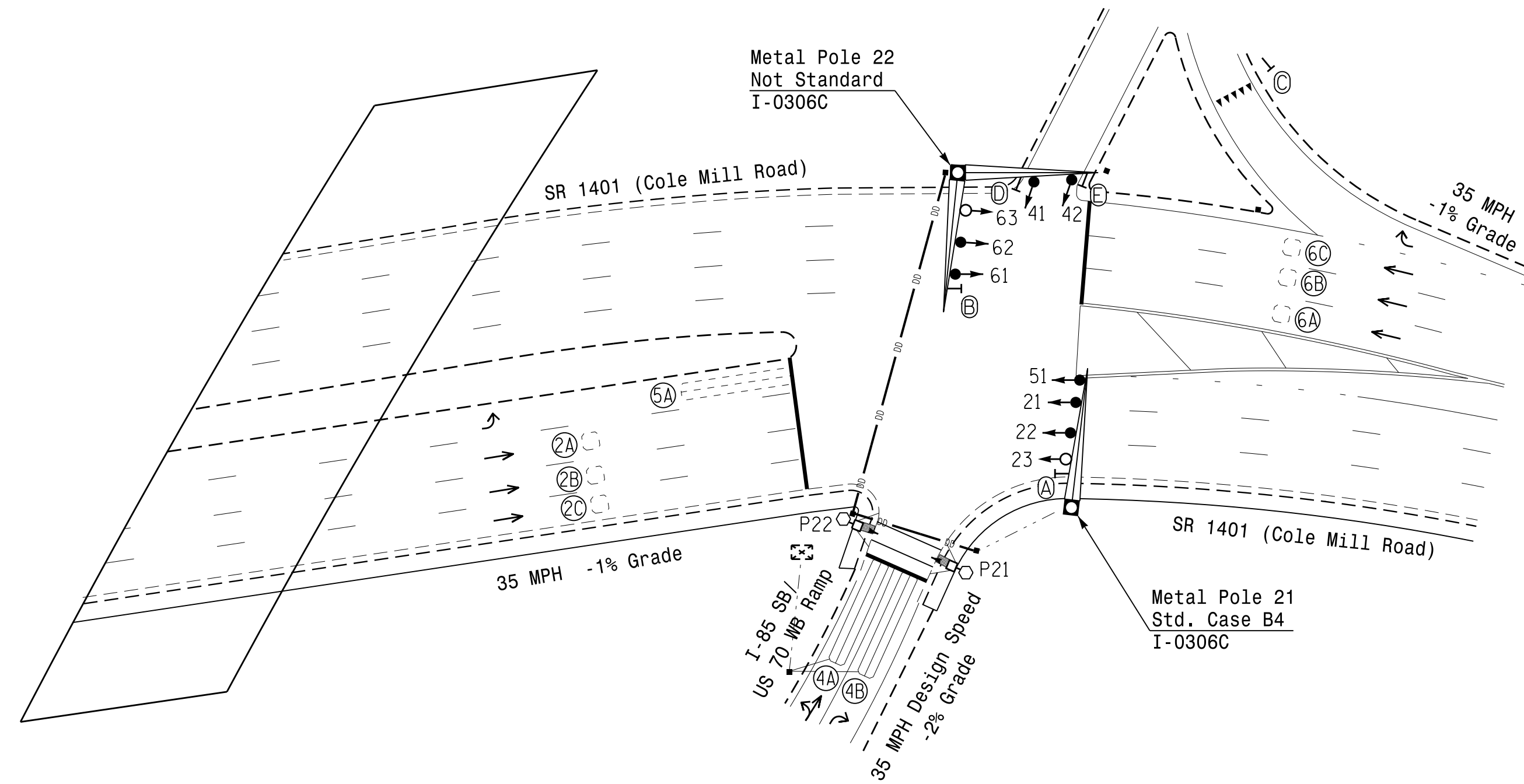
ASC/3 DETECTOR INSTALLATION CHART											
DETECTOR						PROGRAMMING					
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	LOOP NEW CARD
2A	6X6	70	3	-	2	Yes	-	-	-	N	-
2B	6X6	70	3	-	2	Yes	-	-	-	N	-
2C	6X6	70	3	-	2	Yes	-	-	-	N	-
4A	6X40	0	2-4-2	X	4	Yes	-	-	-	N	-
4B	6X40	0	2-4-2	X	4	Yes	-	15	-	N	-
5A	6X40	0	2-4-2	-	5	Yes	-	15*	-	N	-
6A	6X6	70	4	-	6	Yes	-	-	-	N	-
6B	6X6	70	4	-	6	Yes	-	-	-	N	-
6C	6X6	70	4	-	6	Yes	-	-	-	N	-

* Disable delay during Alternate Phasing operation.
Disable phase call for loop during Alternate Phasing operation.

3 Phase Fully Actuated w/ Emergency Vehicle Preemption (Durham 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.
- Phase 5 may be lagged.
- Reposition existing signals heads 21, 22, 51, 61, and 62.
- All existing vehicle signal heads have backplates.
- Install backplates on signal heads 23 and 63.
- 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.
- Pavement markings are existing unless otherwise shown.
- This intersection features a GPS preempt system.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



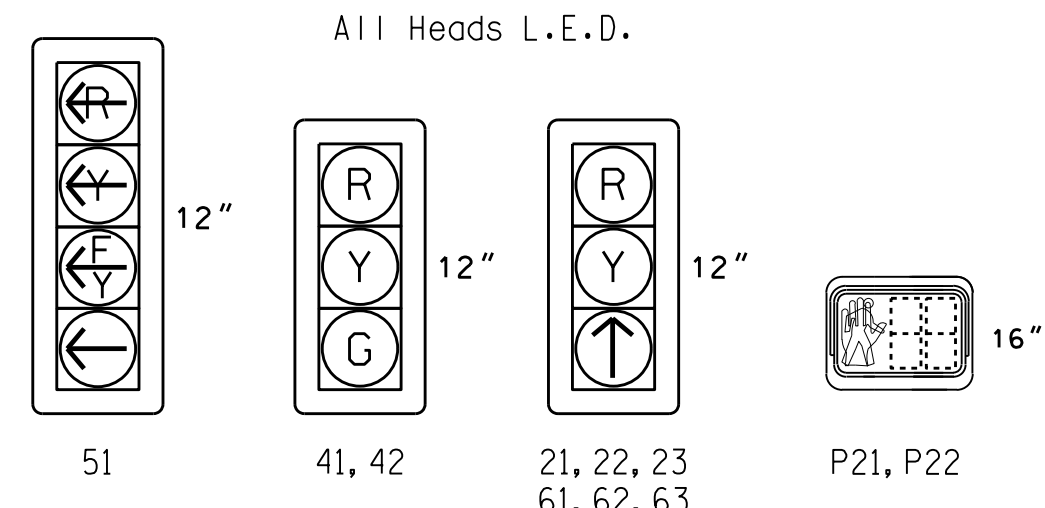
FEATURE	PHASE			
	2	4	5	6
Min Green *	10	7	7	10
Walk *	7	-	-	-
Ped Clear	4	-	-	-
Veh. Extension *	3.0	2.0	2.0	3.0
Max I *	50	25	20	50
Yellow	3.9	4.0	3.0	3.9
Red Clear	2.5	2.9	3.4	2.5
Actuations B4 Add *	-	-	-	-
Seconds / Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	X	-	-	X
Recall Position	VEH. RECALL	-	-	VEH. RECALL
Dual Entry	-	-	-	-
Simultaneous Gap	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.

ASC/3 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.

SIGNAL FACE I.D.



LEGEND	
PROPOSED	EXISTING
○→	Traffic Signal Head
●→	Modified Signal Head
↑	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
N/A	Directional Drill
○	Metal Pole with Mastarm
○	Type II Signal Pedestal
N/A	Curb Ramp
(A)	No Right Turn Sign (R3-1)
(B)	No Left Turn Sign (R3-2)
(C)	"YIELD" Sign (R1-2)
(D)	Combined Through and Left Arrow Sign (R3-6L)
(E)	Right Arrow "ONLY" Sign (R3-5R)

Signal Upgrade

Prepared in the Offices of:

SR 1401 (Cole Mill Road) at I-85 SB/ US 70 WB Ramps
 Division 5 Durham County Durham
 PLAN DATE: July 2023 REVIEWED BY:
 PREPARED BY: J.A. Lohr REVIEWED BY:
 REVISIONS: INIT. DATE
 SCALE: 1" = 40'
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
 SEAL NORTH CAROLINA PROFESSIONAL ENGINEER J.A. LOHR 026486
 09/05/2023
 SIG. INVENTORY NO. 05-1234

27-OCT-2023 11:26
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 J.Lohr