DEFAULT PHASING DIAGRAM

Ø2+6

Ø8

Ø2+5
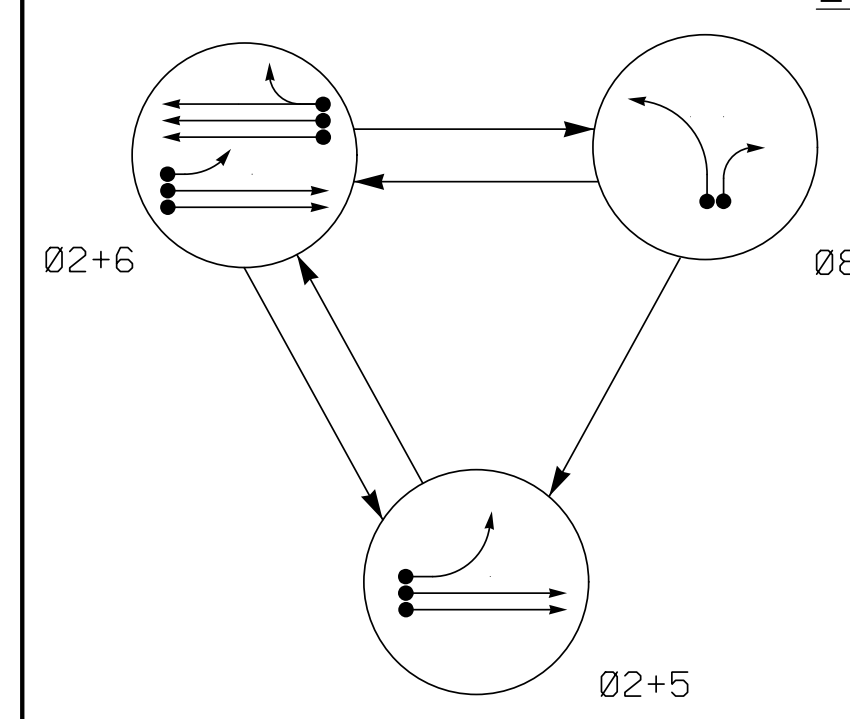
DEFAULT EV PREEMPT PHASES
(Medium Priority)

PRE 3
(Ø2+5)
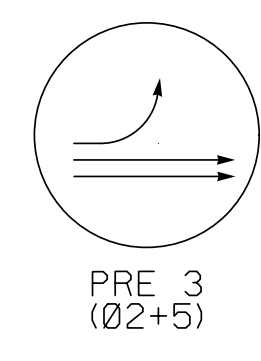
DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE				
	Ø2+5	Ø2+6	Ø8	PRE 3	FLASH
21, 22	↑	↑	R	↑	Y
51	←	←Y	←R←		←Y
61, 62, 63	R	G	R	R	Y
81, 82, 83	R	R	G	R	R

ALTERNATE PHASING DIAGRAM

Ø2+6

Ø8

Ø2+5
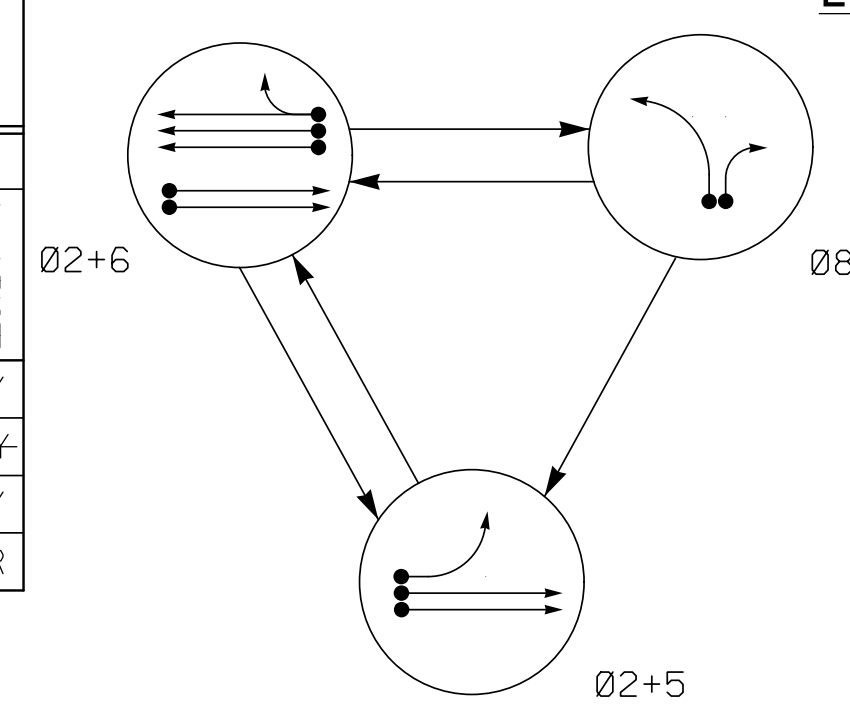
ALTERNATE EV PREEMPT PHASES
(Medium Priority)

PRE 3
(Ø2+5)
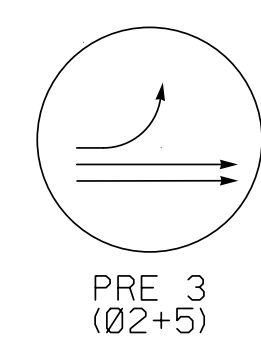
ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE				
	Ø2+5	Ø2+6	Ø8	PRE 3	FLASH
21, 22	↑	↑	R	↑	Y
51	←	←R	←R		←Y
61, 62, 63	R	G	R	R	Y
81, 82, 83	R	R	G	R	R

DETECTOR INSTALLATION CHART

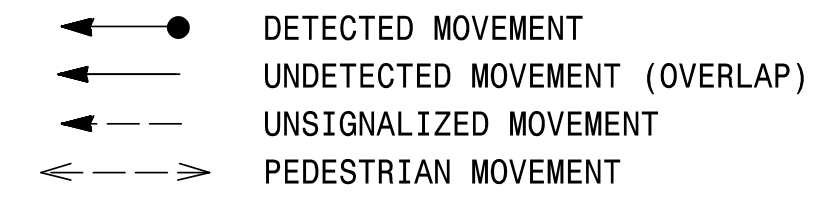| LOOP	DETECTOR				NEW LOOP	PROGRAMMING					TYPE	SYSTEM LOOP	NEW CARD
	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS			PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL			
2A	6X6	90	EXIST	-		2	Yes	-	-	-	N	-	X
2B	6X6	90	EXIST	-		2	Yes	-	-	-	N	-	X
5A	6X60	+5	2-4-2	-		5	Yes	-	5**	-	N	-	X
						2*	Yes	-	-	-	N	-	X
6A	6X6	90	EXIST	-		6	Yes	-	-	-	N	-	X
6B	6X6	90	EXIST	-		6	Yes	-	-	-	N	-	X
6C	6X6	90	EXIST	-		6	Yes	-	-	-	N	-	X
8A	6X40	0	2-4-2	-		8	Yes	-	-	-	N	-	X
8B	6X40	0	2-4-2	-		8	Yes	-	-	-	N	-	X
S1	6X6	+125	EXIST	-		-	No	-	-	-	N	X	X
S2	6X6	+125	EXIST	-		-	No	-	-	-	N	X	X

* Disable phase call for loop during Alternate Phasing Operation.
** Reduce delay to 3 seconds during Alternate Phasing Operation.

3 Phase
Fully Actuated w/
Alternate Phasing Operation and Emergency Vehicle Preemption
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 5 may be lagged.
4. Reposition existing signal heads numbered 21 and 22.
5. Disconnect and abandon existing loop 2A.
6. Set all detector units to presence mode.
7. 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.
8. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
9. Pavement markings are existing.
10. The City Engineer or their representative will determine the hours of use for each phasing plan.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
12. Existing loops 2B and 2C have been relabeled to 2A and 2B, respectively.
13. Install new cabinet on the existing cabinet foundation.
14. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
15. Reconnect lead-in cable to separate loops 2A & 2B, 6A, 6B & 6C, as shown.
16. Existing phase 4 has been changed to phase 8 on this plan. Change all signal heads, pedestrian signal heads, pedestrian push buttons, and loops as needed to achieve the phasing shown.
17. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
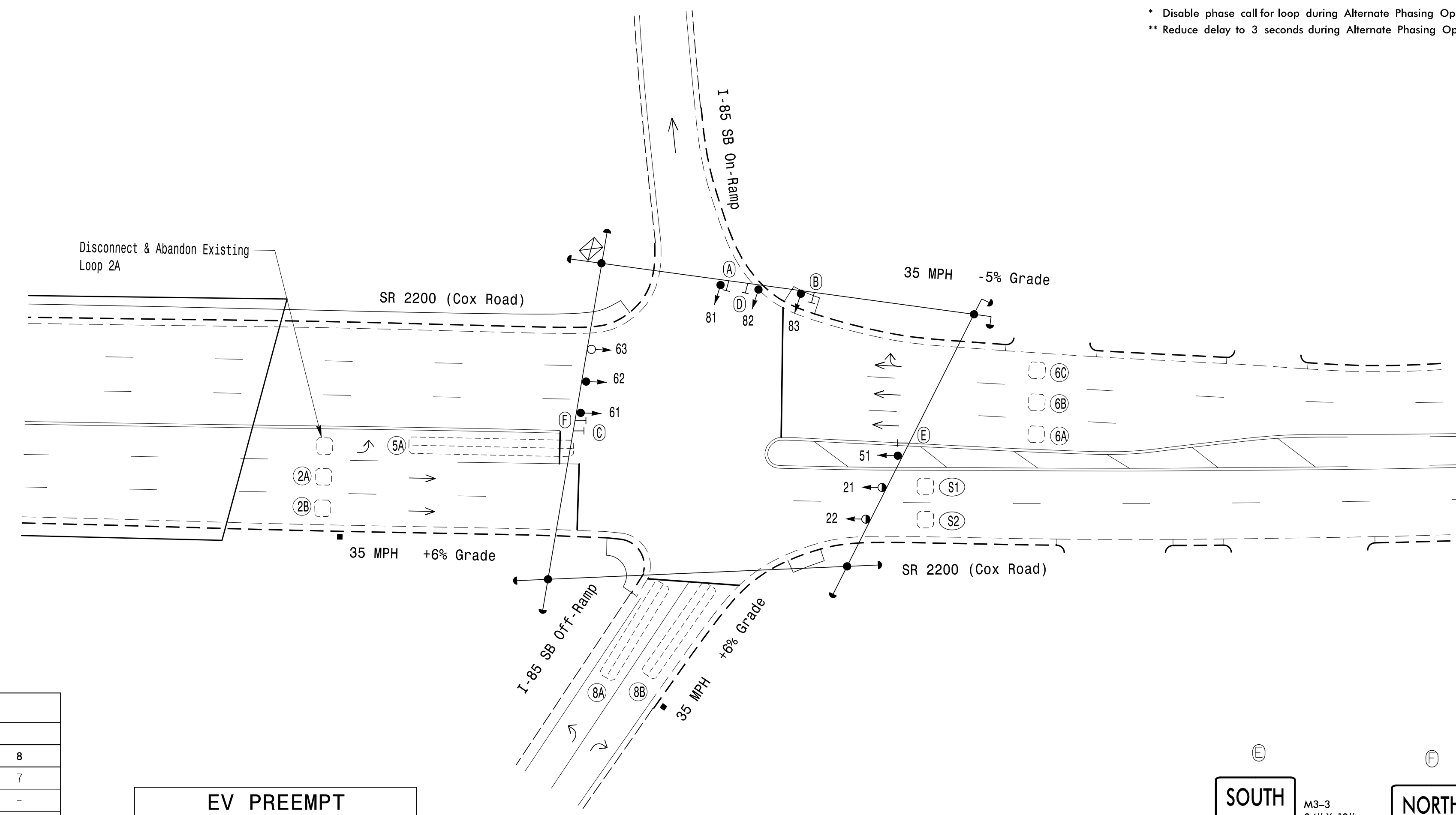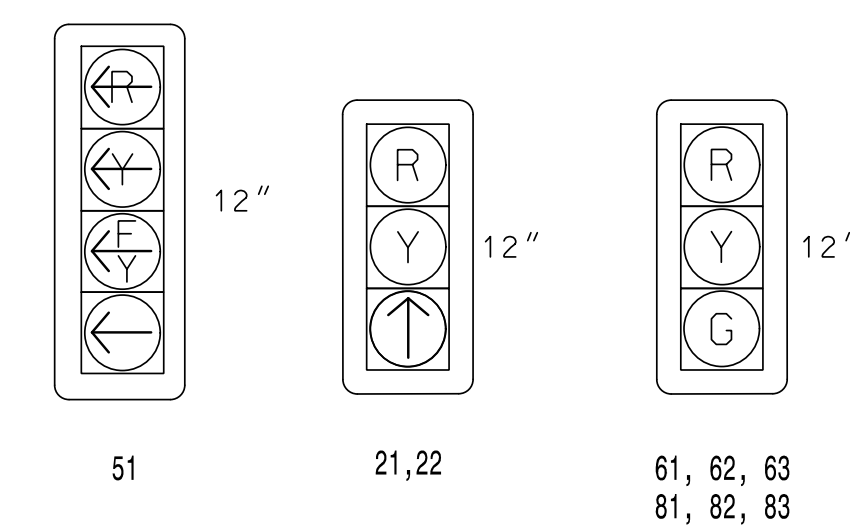18. City system data:
    Controller Asset #0902.

PHASING DIAGRAM DETECTION LEGEND

→● DETECTED MOVEMENT
← UNDETECTED MOVEMENT (OVERLAP)
← UNSIGNALIZED MOVEMENT
←-- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.
All Heads have Backplates with reflective borders

R Y ← (12") 51

R Y ↑ (12") 21,22

R Y G (12") 61, 62, 63 / 81, 82, 83

Disconnect & Abandon Existing Loop 2A

SR 2200 (Cox Road)

I-85 SB On-Ramp

35 MPH -5% Grade

81 82 83

63

62

61

5A

2A

2B

F C

E

51

21

22

S1

S2

6C

6B

6A

35 MPH +6% Grade

SR 2200 (Cox Road)

I-85 SB Off-Ramp

8A 8B

35 MPH +6% Grade

TIMING CHART

FEATURE	PHASE			
	2	5	6	8
Min Green *	10	7	10	7
Walk *	-	-	-	-
Ped Clear *	-	-	-	-
Veh. Extension *	3.0	2.0	3.0	2.0
Max 1 *	45	15	45	30
Yellow	4.2	3.0	4.2	3.5
Red Clear	2.1	2.6	2.1	1.9
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds /Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	X	-	X	-
Recall Position	MIN RECALL	-	MIN 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.

EV PREEMPT

FUNCTION	PRE 3
Exit Phase(s)	2+6
Preempt Override	OFF
Delay Time	0
Ped Clear Through Yellow	N
Terminate Phases	N
Entrance Walk	-
Entrance Ped Clear	-
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
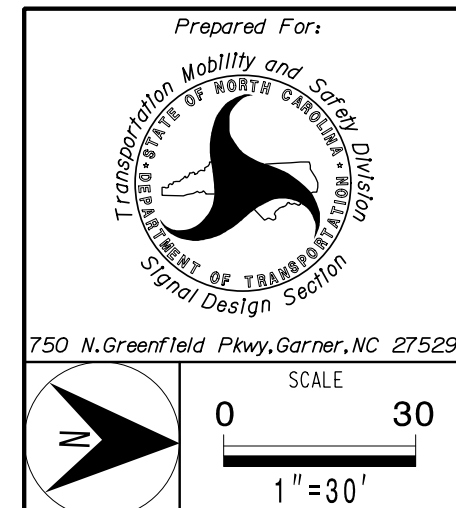** Program Timing on GPS Detection Unit

E SOUTH
M3-3 24" X 12"
INTERSTATE 85 M1-1
← M6-1 L 21" X 15"

F NORTH
M3-3 24" X 12"
INTERSTATE 85 M1-1
↓ M6-3 21" X 15"

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	→
Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
Ⓑ	Right Arrow "ONLY" Sign (R3-5R)	Ⓑ
Ⓒ	No Left Turn Sign (R3-2)	Ⓒ
Ⓓ	Street Name Sign (D3-1)	Ⓓ
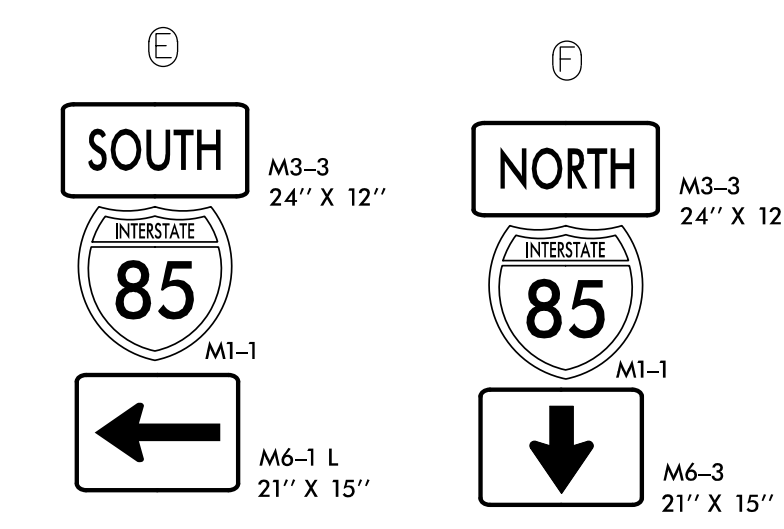
Signal Upgrade

SR 2200 (Cox Rd.) at I-85 Southbound Ramps

Division 12   Gaston County   Gastonia

PLAN DATE: May 2021	REVIEWED BY: SL Phillips
PREPARED BY: SP Pennington	REVIEWED BY: KP Baumann

REVISIONS	INIT.	DATE

NORTH CAROLINA SEAL 044434 KEVIN P. BAUMANN

3/11/2022

SIG. INVENTORY NO. 12-0902