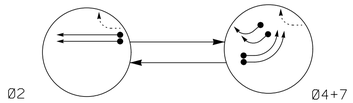
PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.135.0

PHASING DIAGRAM



EV PREEMPT PHASES
(Medium Priority)

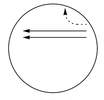
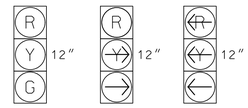


TABLE OF OPERATION				
SIGNAL FACE	PHASE Ø2	PHASE Ø4+7	PHASE PRE 3	PHASE FLASH
21,22	G	R	G	Y
41,42	R	→	R	R
71,72	~~R~~	←	~~R~~	~~R~~

SIGNAL FACE I.D.

All Heads L.E.D.



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	SYSTEM LOOP	NEW CARD
2A/S1	6X6	300	EXIST	-	2	Yes	-	-	X	N	X	X
2B/S2	6X6	300	EXIST	-	2	Yes	-	-	X	N	X	X
4A	6X40	0	2-4-2	-	4	Yes	-	-	-	N	-	X
4B	6X40	0	2-4-2	-	4	Yes	-	-	-	N	-	X
7A	6X40	0	2-4-2	-	7	Yes	-	-	-	N	-	X
7B	6X40	0	2-4-2	-	7	Yes	-	-	-	N	-	X

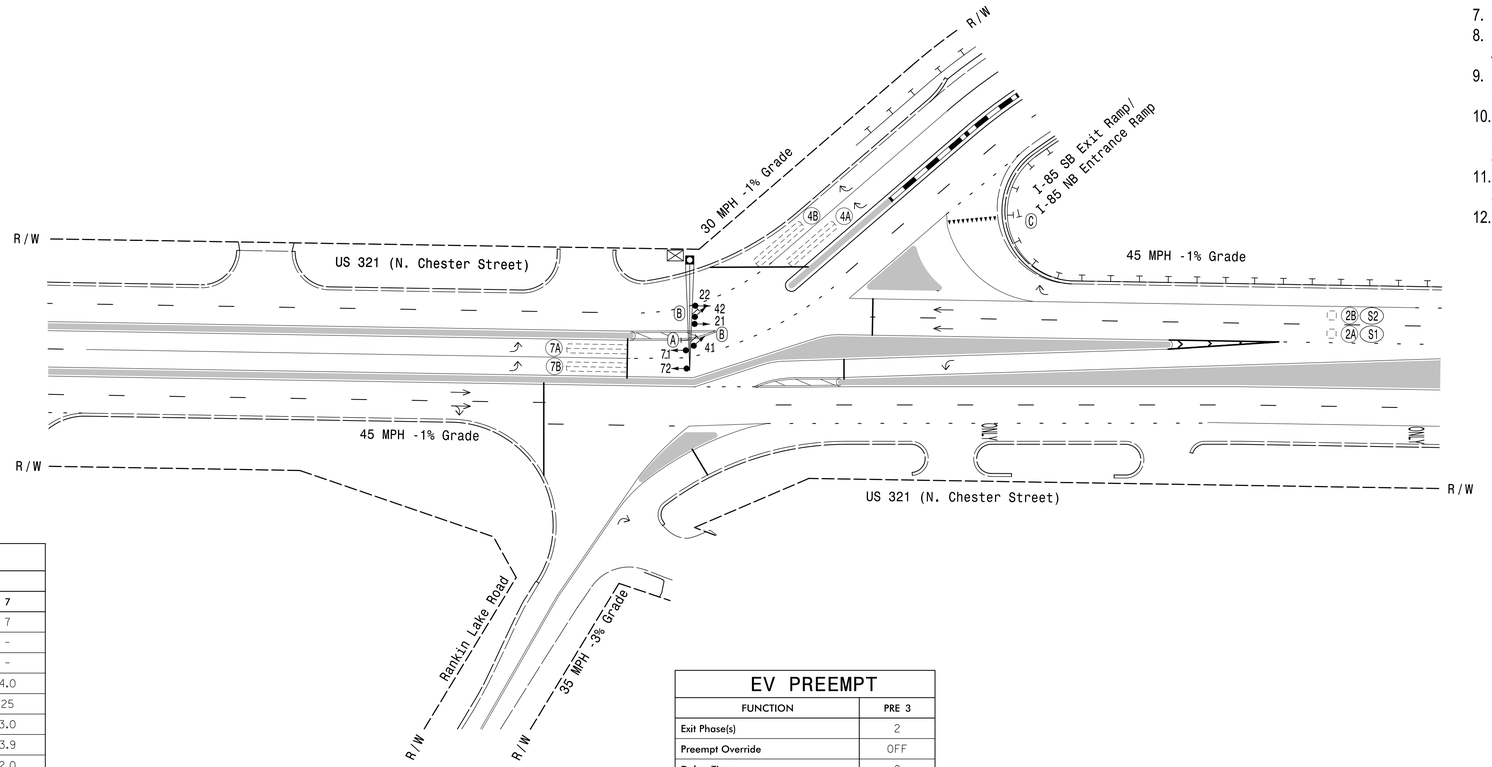
2 Phase
Fully Actuated
w/ Emergency Vehicle Preemption
Gastonia Signal System

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. Set all detector units to presence mode.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. Pavement markings are existing.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
7. Install new cabinet on the existing cabinet foundation.
8. Existing signal heads 73 & 74 have been relabeled to 41 & 42, respectively.
9. Existing loops 7C & 7D have been relabeled to 4A & 4B, respectively.
10. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in the phasing diagram.
11. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
12. City of system data:
    Controller Asset #1803.

PHASING DIAGRAM DETECTION LEGEND

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



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
□↓	Pedestrian Signal Head With Push Button & Sign	■↓
○	Metal Pole with Mastarm	○
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
·····	2-in Underground Conduit	·····
N/A	Right of Way	— — —
→	Directional Arrow	→
N/A	Guardrail	⊥⊥⊥
Ⓐ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓐ
Ⓑ	Right Arrow "ONLY" Sign (R3-5R)	Ⓑ
Ⓒ	"YIELD" Sign (R1-2)	Ⓒ

TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 7
Min Green *	12	7	7
Walk *	-	-	-
Ped Clear	-	-	-
Veh. Extension *	6.0	4.0	4.0
Max 1 *	90	25	25
Yellow	4.6	3.0	3.0
Red Clear	2.3	3.9	3.9
Red Revert	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	-	-
Recall Position	MIN RECALL	-	-
Dual Entry	-	X	X
Simultaneous Gap	X	X	X

* 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.

EV PREEMPT

FUNCTION	PRE 3
Exit Phase(s)	2
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

PLANS PREPARED IN THE OFFICE OF:
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Signal Upgrade

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

US 321 (N. Chester Street) at I-85 SB Exit Ramp/ I-85 NB Entrance Ramp

Division 12 Gaston County Gastonia

PLAN DATE:	May 2021	REVIEWED BY:	SL Phillips
PREPARED BY:	CF Davis	REVIEWED BY:	KP Baumann

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

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. 12-1803