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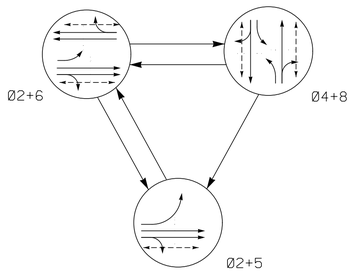
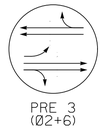
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| C-5703 | Sig.17.0 |

## PHASING DIAGRAM




## EV PREEMPT PHASES
(Medium Priority)

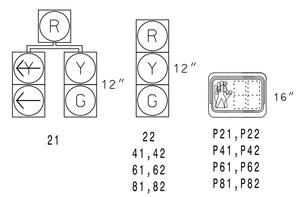



## TABLE OF OPERATION

| SIGNAL FACE | PHASE Ø2+5 | Ø2+6 | Ø4+8 | PRE3 | FLASH |
|---|---|---|---|---|---|
| 21 | G | G | R | G | Y |
| 22 | G | G | R | G | Y |
| 41, 42 | R | R | G | R | R |
| 61, 62 | R | G | R | G | Y |
| 81, 82 | R | R | G | R | R |
| P21, P22 | W | W | DW | DW | DRK |
| P41, P42 | DW | DW | W | DW | DRK |
| P61, P62 | DW | W | DW | DW | DRK |
| P81, P82 | DW | DW | W | DW | DRK |

## 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 |
| S1 | 6X6 | +220 | EXIST | - | - | No | - | - | - | N | X | X |
| S2 | 6X6 | +220 | EXIST | - | - | No | - | - | - | N | X | X |

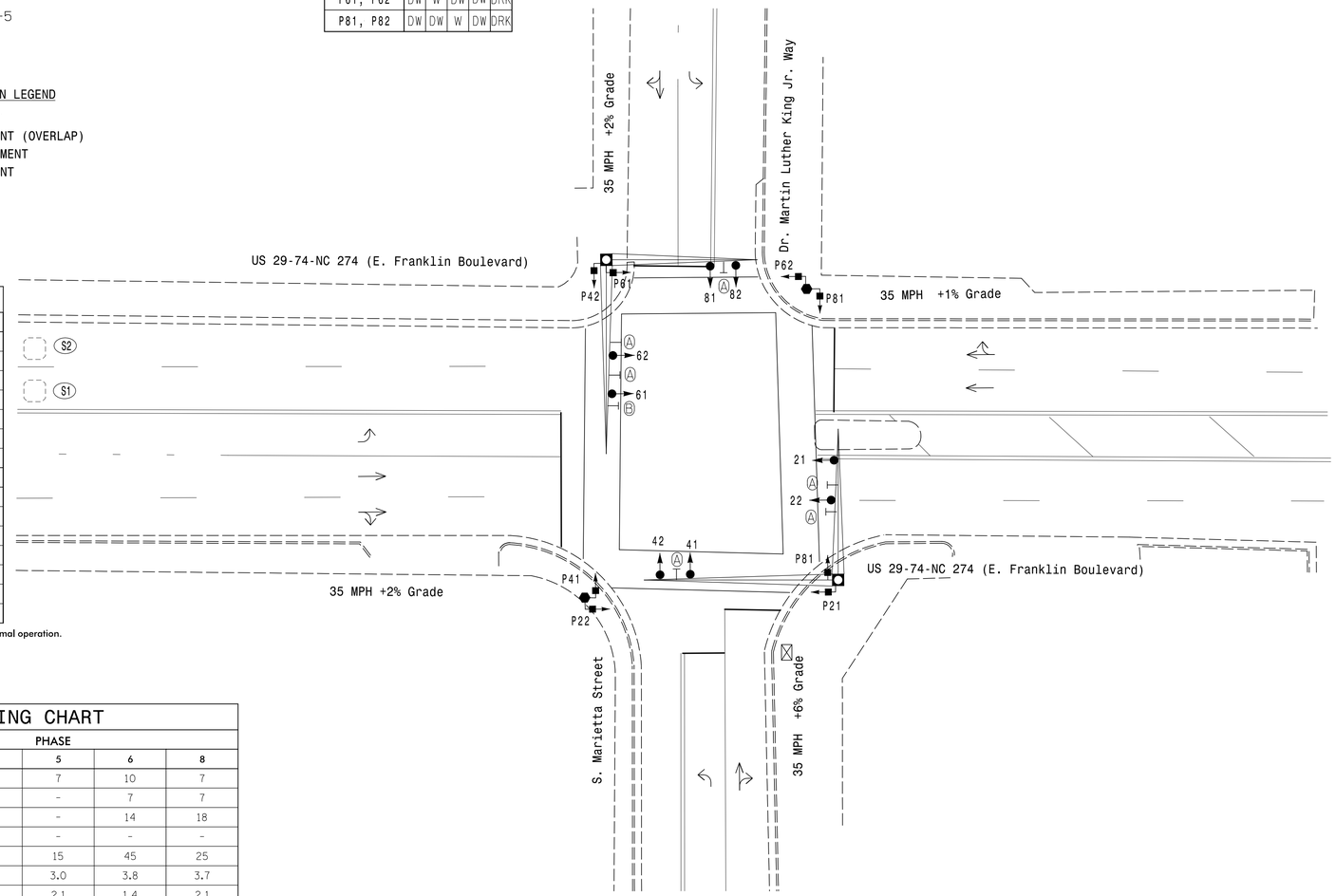
3 Phase
Pre-Timed w/
Emergency Vehicle Preemption
Gastonia Signal System

## 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. Phase 5 may be lagged.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
6. Pavement markings are existing.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
8. Install new cabinet on the existing cabinet foundation.
9. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
10. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
11. City system data:
    Controller Asset: #0041

### PHASING DIAGRAM DETECTION LEGEND

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




## 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 | 10 |
| 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.

## TIMING CHART

| FEATURE | PHASE 2 | 4 | 5 | 6 | 8 |
|---|---|---|---|---|---|
| Min Green * | 10 | 7 | 7 | 10 | 7 |
| Walk * | 7 | 7 | - | 7 | 7 |
| Ped Clear | 14 | 18 | - | 14 | 18 |
| Veh. Extension * | - | - | - | - | - |
| Max 1 * | 45 | 25 | 15 | 45 | 25 |
| Yellow | 3.8 | 3.7 | 3.0 | 3.8 | 3.7 |
| Red Clear | 1.4 | 2.1 | 2.1 | 1.4 | 2.1 |
| Red Revert | 2.0 | 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 | - | - | - | - | - |
| Recall Position | PED/MAX | PED/MAX | MAX RECALL | PED/MAX | PED/MAX |
| Dual Entry | - | X | - | - | X |
| Simultaneous Gap | X | 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.

## LEGEND

| PROPOSED | | EXISTING |
|---|---|---|
| ○→ | Traffic Signal Head | ●→ |
| ◐→ | Modified Signal Head | N/A |
| ⊣ | Sign | ⊣ |
| ⬡ | Type II Signal Pedestal | ⬢ |
| □ | Pedestrian Signal Head With Sign | ■ |
| ○ | Metal Pole with Mastarm | ○ |
| ▭ | Inductive Loop Detector | ▭ |
| ⊠ | Controller & Cabinet | ⊠ |
| □ | Junction Box | ■ |
| ---------- | 2-in Underground Conduit | ---------- |
| N/A | Right of Way | ---------- |
| → | Directional Arrow | → |
| Ⓐ | Street Name Sign (D3-1) | Ⓐ |
| Ⓑ | No Left Turn Sign (R3-2) | Ⓑ |

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

US 29-74-NC 274
(E. Franklin Boulevard)
at S. Marietta Street/
Dr. Martin Luther King Jr. Way
Division 12 Gaston County Gastonia

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

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SCALE 0 20 1"=20'

NORTH CAROLINA PROFESSIONAL SEAL 044434 ENGINEER KEVIN P. BAUMANN

DocuSigned by: 3/11/2022
SIGNATURE DATE

SIG. INVENTORY NO. 12-0041

PLANS PREPARED IN THE OFFICE OF:
Kimley»Horn
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000

3/9/2022 11:13:16 AM Danielle.Curri ***kimley-horn.com*SE_RAL1*RAL_TPTO*_ITS*M011036569 Gastonia Signal System*9 Signals*64 - Signal Design*M8120041-2021.dgn