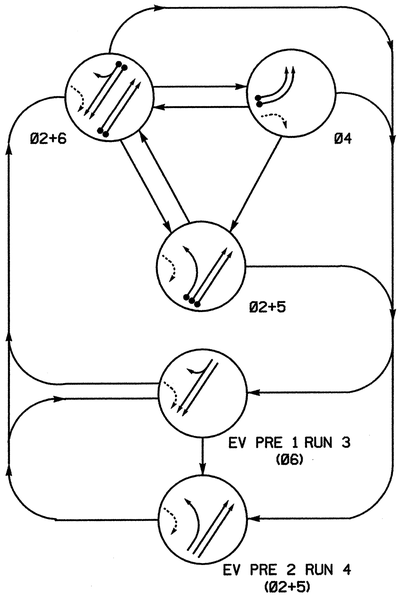
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| B-3681 | SIG. 2 |

3 Phase
Fully Actuated with
Emergency Vehicle Preemption
(Rocky Mount Signal System)

## PHASING DIAGRAM

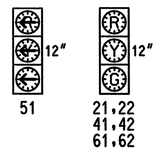



## TABLE OF OPERATION

| SIGNAL FACE | Ø2+5 | Ø2+6 | Ø4 | EV PRE 1 RUN 3 | EV PRE 2 RUN 4 | FLASH |
|---|---|---|---|---|---|---|
| | PHASE | | | | | |
| 21,22 | G | G | R | R | G | Y |
| 41,42 | R | R | G | R | R | R |
| 51 | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ | ~~R~~ |
| 61,62 | R | G | R | G | R | Y |

## SIGNAL FACE I.D.

Denotes L.E.D.




## LOOP & DETECTOR UNIT INSTALLATION CHART
NEMA CONTROLLER WITH TS-1 CABINET

| INDUCTIVE LOOPS | | | | | | DETECTOR UNITS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOOP NO. | SIZE (ft) | TURNS | DIST. FROM STOPBAR (ft) | NEW | EXISTING | UNIT NO. | NEW | EXISTING | CHANNEL | NEMA PHASE | TIMING FEATURE | TIMING TIME | PLACE CALL DURING PHASE | INHIBIT DELAY DURING GREEN? |
| 2A,SD1 | 6x6 | 5 | 300 | X | - | 2 | - | X | 1 | Ø2 | - | - SEC. | ALL | NO |
| | | | | | | 5 | - | X | - | System Detector | | | | |
| 2B,SD2 | 6x6 | 5 | 300 | X | - | 2 | - | X | 2 | Ø2 | - | - SEC. | ALL | NO |
| | | | | | | 6 | - | X | - | System Detector | | | | |
| 4A | 6x40 | 2-4-2 | 0 | X | - | 3 | - | X | 1 | Ø4 | DELAY | 2 SEC. | ALL | YES |
| 4B | 6x40 | 2-4-2 | 0 | X | - | 3 | - | X | 2 | Ø4 | - | - SEC. | ALL | NO |
| 5A | 6x40 | 2-4-2 | 0 | X | - | 1 | - | X | 2 | Ø5 | - | - SEC. | ALL | NO |
| 6A,SD3 | 6x6 | 4 | 300 | X | - | 4 | - | X | 1 | Ø6 | - | - SEC. | ALL | NO |
| | | | | | | 7 | - | X | - | System Detector | | | | |
| 6B,SD4 | 6x6 | 4 | 300 | X | - | 4 | - | X | 2 | Ø6 | - | - SEC. | ALL | NO |
| | | | | | | 8 | - | X | - | System Detector | | | | |
| SD5 | 6x6 | - | 425 | - | X | 9 | - | X | - | System Detector | | | | |
| SD6 | 6x6 | - | 425 | - | X | 10 | - | X | - | System Detector | | | | |
| EV1 | EV Preemptor 1 | | | - | X | - | - | X | - | EVP1 | | | | |
| EV2 | EV Preemptor 2 | | | - | X | - | - | X | - | EVP2 | | | | |




## NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
2. Do not program signal for late night flashing operation unless otherwise directed by the engineer.
3. Phase 5 may be lagged.
4. Set all detector units to presence mode.
5. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
7. System intersection number 1011.

## PLAN QUANTITIES

| Pay Item | Feet |
|---|---|
| Signal Cable | 0 |
| Messenger Cable | 0 |
| Loop Lead-in Cable | 940 |

## 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 with Marker | |
| | Directional Arrow | |
| | Construction Zone Drums | |
| | Construction Zone | |
| N/A | Guardrail | |
| DD | Directional Drill (2) 2-IN Conduit | N/A |
| | Metal Strain Pole | |
| | Emergency Vechicle Detector | |
| N/A | "YIELD" Sign (R1-2) | |
| | No Left Turn Sign (R3-2) | N/A |
| | Left Arrow "ONLY" Sign (R3-5L) | N/A |

## TIMING CHART
NEMA CONTROLLER

| PHASE | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| MINIMUM GREEN* | 12 SEC. | 7 SEC. | 7 SEC. | 12 SEC. |
| PASSAGE/GAP* | 6.0 SEC. | 2.0 SEC. | 2.0 SEC. | 6.0 SEC. |
| YELLOW CHANGE INT. | 4.5 SEC. | 3.5 SEC. | 3.5 SEC. | 4.5 SEC. |
| RED CLEARANCE | 1.7 SEC. | 3.8 SEC. | 2.2 SEC. | 1.7 SEC. |
| MAX. 1* | 90 SEC. | 30 SEC. | 15 SEC. | 90 SEC. |
| RECALL POSITION | MIN. RECALL | NONE | NONE | MIN. RECALL |
| VEHI. CALL MEMORY | LOCK | NONLOCK | NONLOCK | LOCK |
| WALK* | – SEC. | – SEC. | – SEC. | – SEC. |
| FLASHING DON'T WALK | – SEC. | – SEC. | – SEC. | – SEC. |
| VOLUME DENSITY | ON | OFF | OFF | ON |
| ACTUATION B4 ADD | 0 VEH. | – VEH. | – VEH. | 0 VEH. |
| SEC. PER ACTUATION* | 1.5 SEC. | – SEC. | – SEC. | 1.5 SEC. |
| MAX. INITIAL* | 34 SEC. | – SEC. | – SEC. | 34 SEC. |
| TIME B4 REDUCTION* | 15 SEC. | – SEC. | – SEC. | 15 SEC. |
| TIME TO REDUCE* | 30 SEC. | – SEC. | – SEC. | 30 SEC. |
| MINIMUM GAP | 3.0 SEC. | – SEC. | – SEC. | 3.0 SEC. |

* These values may be field adjusted. Do not adjust Min Green and Passage/Gap times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

## NEMA EV PREEMPTION

| FUNCTION | EV PRE 1 RUN 3 | EV PRE 2 RUN 4 |
|---|---|---|
| Delay Before Preempt | 0 | 0 |
| Ped. Clear Before Preempt | – | – |
| Min. Green Before Preempt | 1 | 1 |
| Yellow Clear Before Preempt | 4.5 | 4.5 |
| Red Clear Before Preempt | 3.8 | 3.8 |
| Preempt Dwell Min. Green | 10 | 10 |
| Yellow Clr After Preempt | 4.5 | 4.5 |
| Red Clr After Preempt | 1.7 | 1.7 |
| Ped Clear Through Yellow | N | N |
| Preempt Extend** | 5.0 | 5.0 |

** Program Timing on Optical Detection Unit

Signal Upgrade - Temporary

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Traffic Engineering and Safety Systems Branch
Signals and Geometrics Section

US 301 Business (Centura Hwy)
at
SR 1542 (Airport Rd)/SR 1555

Division 04 Nash County Rocky Mount

PLAN DATE: Feburary 2005 REVIEWED BY: S.T. Franklin
PREPARED BY: T.R. Terrell REVIEWED BY: C.A. Johnson

SCALE 0 50 1"=50'

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

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028657 ENGINEER SPENCER T. FRANKLIN

Spencer T. Franklin 4-12-05
SIGNATURE DATE

SIG. INVENTORY NO. 04-0107(t)