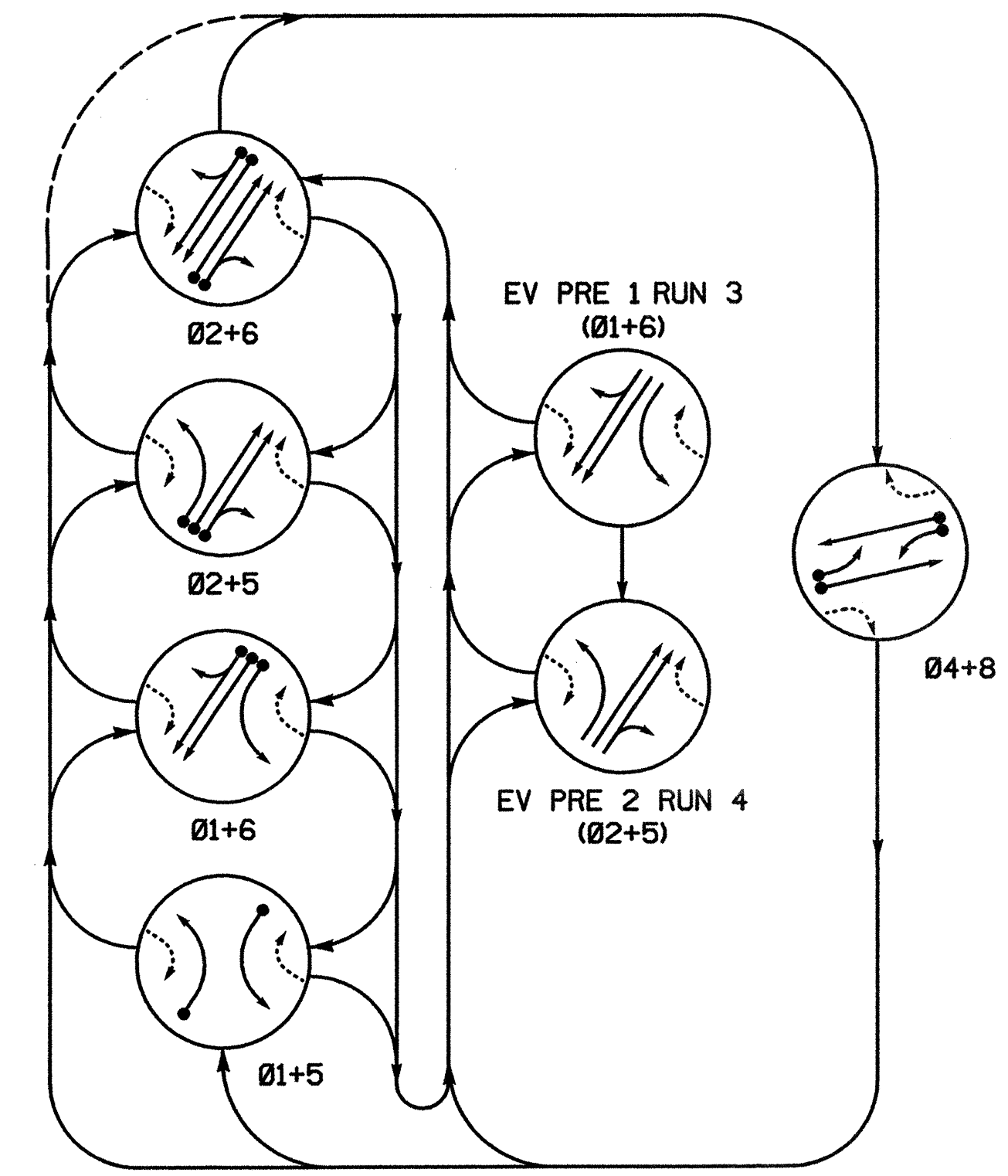


**PHASING DIAGRAM**



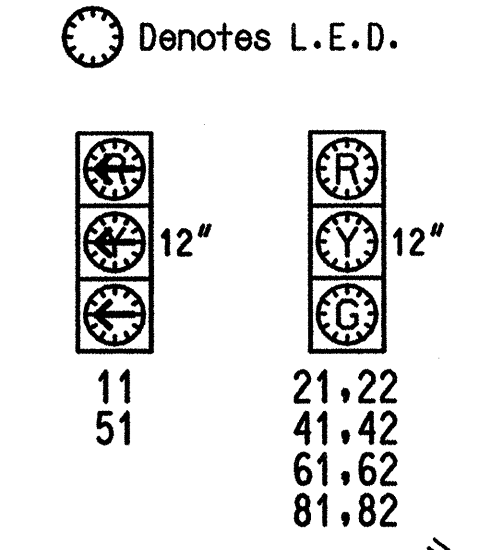
**PHASING DIAGRAM DETECTION LEGEND**

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

**TABLE OF OPERATION**

| SIGNAL FACE | PHASE |      |      |      |      |                |                |         |
|-------------|-------|------|------|------|------|----------------|----------------|---------|
|             | Ø1+5  | Ø1+6 | Ø2+5 | Ø2+6 | Ø4+8 | EV PRE 1 RUN 3 | EV PRE 2 RUN 4 | FLASHER |
| 11          |       |      | R    | R    | R    | R              | R              | R       |
| 21,22       | R     | R    | G    | G    | R    | R              | G              | Y       |
| 41,42       | R     | R    | R    | R    | G    | R              | R              | R       |
| 51          |       | R    |      |      | R    | R              |                | R       |
| 61,62       | R     | G    | R    | G    | R    | G              | R              | Y       |
| 81,82       | R     | R    | R    | R    | G    | R              | R              | R       |

**SIGNAL FACE I.D.**



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

| LOOP NO.        | SIZE (ft)      | TURNS | DIST. FROM STOPBAR (ft) | NEW EXISTING | UNIT NO. |          | NEMA PHASE | TIMING  |      | PLACE CALL DURING PHASE | INHIBIT DELAY DURING GREEN? |     |     |
|-----------------|----------------|-------|-------------------------|--------------|----------|----------|------------|---------|------|-------------------------|-----------------------------|-----|-----|
|                 |                |       |                         |              | NEW      | EXISTING |            | FEATURE | TIME |                         |                             |     |     |
| 1A              | 6x40           | 2-4-2 | 0                       | X            | -        | 1        | -          | X       | Ø1   | DELAY                   | 2 SEC.                      | ALL | YES |
| 2A,SD1          | 6x6            | 5     | 300                     | X            | -        | 2        | -          | X       | Ø2   | -                       | - SEC.                      | ALL | NO  |
| System Detector |                |       |                         |              |          |          |            |         |      |                         |                             |     |     |
| 2B,SD2          | 6x6            | 5     | 300                     | X            | -        | 2        | -          | X       | Ø2   | -                       | - SEC.                      | ALL | NO  |
| System Detector |                |       |                         |              |          |          |            |         |      |                         |                             |     |     |
| 4A              | 6x40           | 2-4-2 | 0                       | X            | -        | 3        | -          | X       | Ø4   | DELAY                   | 2 SEC.                      | ALL | YES |
| 4B              | 6x40           | 2-4-2 | 0                       | X            | -        | 3        | -          | X       | Ø4   | -                       | - SEC.                      | ALL | NO  |
| 5A              | 6x40           | 2-4-2 | 0                       | X            | -        | 1        | -          | X       | Ø5   | DELAY                   | 2 SEC.                      | ALL | YES |
| 6A,SD3          | 6x6            | 4     | 300                     | X            | -        | 4        | -          | X       | Ø6   | -                       | - SEC.                      | ALL | NO  |
| System Detector |                |       |                         |              |          |          |            |         |      |                         |                             |     |     |
| 6B,SD4          | 6x6            | 4     | 300                     | X            | -        | 4        | -          | X       | Ø6   | -                       | - SEC.                      | ALL | NO  |
| System Detector |                |       |                         |              |          |          |            |         |      |                         |                             |     |     |
| 8A              | 6x40           | 2-4-2 | 0                       | X            | -        | 11       | X          | -       | Ø8   | DELAY                   | 2 SEC.                      | ALL | YES |
| 8B              | 6x40           | 2-4-2 | 0                       | X            | -        | 11       | X          | -       | Ø8   | -                       | - SEC.                      | ALL | NO  |
| SD5             | 6x6            | -     | -                       | X            | -        | 9        | -          | X       | -    | -                       | - SEC.                      | -   | -   |
| System Detector |                |       |                         |              |          |          |            |         |      |                         |                             |     |     |
| SD6             | 6x6            | -     | -                       | X            | -        | 10       | -          | X       | -    | -                       | - SEC.                      | -   | -   |
| System Detector |                |       |                         |              |          |          |            |         |      |                         |                             |     |     |
| EVI             | EV Preemptor 1 |       |                         |              | X        | -        | X          | 1       | EVP1 |                         |                             |     |     |
| EV2             | EV Preemptor 2 |       |                         |              | X        | -        | X          | 2       | EVP2 |                         |                             |     |     |

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

**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
- Do not program signal for late night flashing operation unless otherwise directed by the engineer.
- Phase 1 or phase 5 may be lagged.
- Program phase 4 and phase 8 for dual entry.
- Set all detector units to presence mode.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- System intersection number 1011.

**PLAN QUANTITIES**

| Pay Item           | Feet |
|--------------------|------|
| Signal Cable       | 1000 |
| Messenger Cable    | 0    |
| Loop Lead-in Cable | 490  |

**TIMING CHART**  
NEMA CONTROLLER

| PHASE               | 1        | 2           | 4        | 5        | 6           | 8        |
|---------------------|----------|-------------|----------|----------|-------------|----------|
| MINIMUM GREEN*      | 7 SEC.   | 12 SEC.     | 7 SEC.   | 7 SEC.   | 12 SEC.     | 7 SEC.   |
| PASSAGE GAP*        | 2.0 SEC. | 6.0 SEC.    | 2.0 SEC. | 2.0 SEC. | 6.0 SEC.    | 2.0 SEC. |
| YELLOW CHANGE INT.  | 3.5 SEC. | 4.5 SEC.    | 4.5 SEC. | 3.5 SEC. | 4.5 SEC.    | 4.5 SEC. |
| RED CLEARANCE       | 1.7 SEC. | 1.7 SEC.    | 2.5 SEC. | 2.2 SEC. | 1.7 SEC.    | 2.5 SEC. |
| MAX. 1"             | 15 SEC.  | 90 SEC.     | 30 SEC.  | 15 SEC.  | 90 SEC.     | 30 SEC.  |
| RECALL POSITION     | NONE     | MIN. RECALL | NONE     | NONE     | MIN. RECALL | NONE     |
| VEHI. CALL MEMORY   | NONLOCK  | LOCK        | NONLOCK  | NONLOCK  | LOCK        | NONLOCK  |
| WALK*               | - SEC.   | - SEC.      | - SEC.   | - SEC.   | - SEC.      | - SEC.   |
| FLASHING DON'T WALK | - SEC.   | - SEC.      | - SEC.   | - SEC.   | - SEC.      | - SEC.   |
| VOLUME DENSITY      | OFF      | ON          | OFF      | OFF      | ON          | OFF      |
| ACTUATION B4 ADD    | - VEHI.  | 0 VEHI.     | - VEHI.  | - VEHI.  | 0 VEHI.     | - VEHI.  |
| SEC. PER ACTUATION* | - SEC.   | 1.5 SEC.    | - SEC.   | - SEC.   | 1.5 SEC.    | - SEC.   |
| MAX. INITIAL*       | - SEC.   | 34 SEC.     | - SEC.   | - SEC.   | 34 SEC.     | - SEC.   |
| TIME B4 REDUCTION*  | - SEC.   | 15 SEC.     | - SEC.   | - SEC.   | 15 SEC.     | - SEC.   |
| TIME TO REDUCE*     | - SEC.   | 30 SEC.     | - SEC.   | - SEC.   | 30 SEC.     | - SEC.   |
| MINIMUM GAP         | - SEC.   | 3.0 SEC.    | - SEC.   | - SEC.   | 3.0 SEC.    | - SEC.   |

**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    | 2.5            | 2.5            |
| 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            |

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

\*\* Program Timing on Optical Detection Unit

Signal Upgrade - Final

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

Division 04 Nash County Rocky Mount

PLAN DATE: February 2005 REVIEWED BY: S.T. Franklin

PREPARED BY: T.R. Terrell REVIEWED BY: C.A. Johnson

REVISIONS: INIT. DATE

SCALE: 1"=50'

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

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER T. FRANKLIN

SIG. INVENTORY NO. 04-0107

