2 Phase

Fully Actuated

w/ EV Preemption

(Durham Signal System)

NOTES

2. Do not program signal for late night

3. Reposition signal heads #81 and #82.

4. Set all detector units to presence mode.

1,2, and 3 unless otherwise noted.

by the Engineer

phases used.

required.

pedestrian calls.

"Don't Walk" time.

are conceptual only.

9. Pavement markings are existing.

values supersede these values.

1. Refer to "Road Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012.

flashing operation unless otherwise directed

5. Program all timing information into phase banks

7. Omit "WALK" and flashing "DON'T WALK" with no

6. Set phase bank 3 maximum limit to 250 seconds for

8 Program pedestrian heads to countdown the flashing

10. This intersection features an optical preemption

11. Upon completion of Emergency Vehicle Preemption,

13. Disconnect and bag signal head #31, #41, #42 and

14. Contractor shall adjust video detection zones as

12. Maximum times shown in timing chart are for free-run

operation only. Coordinated signal system timing

LEGEND

Traffic Signal Head

Modified Signal Head

Sign

Pedestrian Signal Head With Push Button & Sign Signal Pole with Guy Signal Pole with Sidewalk Guy Inductive Loop Detector

Junction Box

Right of Way

Directional Arrow Left Arrow "ONLY" Sign (R3-5L)

No Right Turn Sign (R3-1)

No Left Turn Sign (R3-2)

Work Area

Drums

Permanent Utility Easement

Barricades

Direct Bury

Optical Detector

Video Detector

Video Detection Area

Permanent Drainage Easement N/A

----E---- Construction Easement

2-in Underground Conduit -----

EXISTING

-

N/A

N/A

N/A

controller returns to normal operation.

#43 during this phase of construction.

PROPOSED

N/A

 \bigcirc

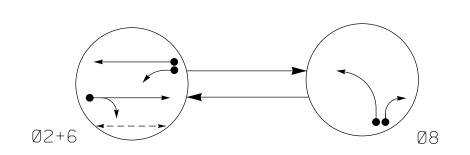
Signal Upgrade - Temporary Design 2 (TMP Phase 1, Steps 11-21)

NC 55

(South/North Alston Avenue)

system. Shown locations of optical detectors

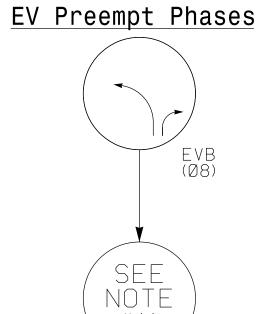
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

DETECTED MOVEMENT UNDETECTED MOVEMENT (OVERLAP)

> UNSIGNALIZED MOVEMENT PEDESTRIAN MOVEMENT



#11

ABLE	0F	OPERATION	

I/OLL OI	01 1	_	110	11									
	PHASE												
SIGNAL FACE	Ø 2 + 6	Ø 8	E V B	FLASH									
22,23	G	R	R	Υ									
61	- F			← Y									
62,63	G	R	R	Υ									
81,82	R	G	G	R									
P21 , P22	W	DW	DW	DRK									

2033 SOFTWARE w/ 2070 CONTROLLER LOOP & DETECTOR UNIT INSTALLATION CHART

							DETECTOR PROGRAMMING												
INDUCTIVE LOOPS						TIMING				ATTRIBUTES								STA	TUS
			DICT FROM				IIM	ING	1	2 Z	3	4	5	6	7	8	LOOPS		<u>ა</u>
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	NEMA PHASE	DELAY	CARRY (STRETCH)	FULL TIME DELAY	PEDESTRIAN CALL	RESERVED	COUNT	EXTENSION	TYPE 3	CALLING	ALTERNATE	SYSTEM	NEW	EXISTING
2A	6×6	*	70	-	*	2	- SEC.	- SEC.	_	_	_	_	X	-	X	_	_	-	*
6A	6×6	*	70	-	*	6	- SEC.	- SEC.	_	-	-	_	Χ	-	Χ	-	-	-	*
6B	6×40	*	0	-	*	6	- SEC.	- SEC.	_	_	-	_	Х	_	X	_	_	-	*
8.4	6×40	*	0	-	*	8	3 SEC.	- SEC.	_	-	-	_	Χ	_	Χ	-	_	-	*
8B	6×40	*	0	-	*	8	15 SEC.	- SEC.	_	-	-	-	Χ	_	Χ	-	_	-	*
PEDES	PEDESTRIAN DETECTION																		
P21 , P22	N/A	N/A	N/A	-	Χ	2	- SEC.	- SEC.	_	Χ	-	_	-	_	-	-	_	_	X

2033 EV PREEMPTION

FUNCTION	EVB (SECONDS)
DELAY BEFORE PREEMPT	0
MIN. PED. CLEAR BEFORE PREEMPT	*
MIN. GREEN BEFORE PREEMPT	1
CLEARANCE TIME	2
PREEMPT EXTEND**	2.0

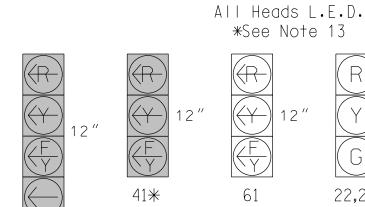
* See Timing Chart for Min Ped Clearance

** Program Timing on Optical Detector Unit

DETECTOR PROGRAMMING																			
INDUCTIVE LOOPS									ATTRIBUTES & ST							STA	STATUS		
DIAT FROM La						TIM	1	1 2		4	5	6	7	8	LOOPS		<u>ა</u>		
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	NEMA PHASE	DELAY	CARRY (STRETCH)	FULL TIME DELAY	PEDESTRIAN CALL	RESERVED	COUNT	EXTENSION	TYPE 3	CALLING	ALTERNATE	SYSTEM	NEW	EXISTING
2A	6×6	*	70	-	*	2	- SEC.	- SEC.	-	-	-	_	Χ	-	Χ	-	-	-	*
6A	6×6	*	70	-	*	6	- SEC.	- SEC.	-	-	-	_	Χ	-	Χ	-	-	-	*
6B	6×40	*	0	-	*	6	- SEC.	- SEC.	_	-	-	-	Χ	-	Χ	_	-	-	*
8.4	6×40	*	0	-	*	8	3 SEC.	- SEC.	_	-	-	_	Χ	-	Χ	-	-	-	*
8B	6×40	*	0	-	*	8	15 SEC.	- SEC.	-	-	-	-	Χ	_	Χ	_	_	-	*
PEDES	STRIAN	DETECT	ION																
P21 P22	N/A	N/A	N/A	Ι_	Υ	2	- SEC	- SEC	_	Υ	_	_	_	_	_	_	_	_	Υ

* Video Detection Zone

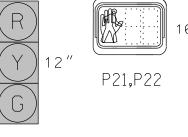
SIGNAL FACE I.D.



31*

NC 55 (S. Alston Avenue)

22,23 62,63



42,43*

81,82

35 Mph -2% Grade

TIMING CHART

2033 SOFTWARE w/2070 CONTROLLER

MINIMUM INITIAL *	10	SEC.	10	SEC.	7	SEC.	0
VEHICLE EXTENSION *	3.0	SEC.	3.0	SEC.	2.0	SEC.	
YELLOW CHANGE INT.	4.0	SEC.	4.0	SEC.	3.0	SEC.	4.0
RED CLEARANCE	2.2	SEC.	2.2	SEC.	2.3	SEC.	2.2
MAXIMUM LIMIT *	50	SEC.	50	SEC.	35	SEC.	50
RECALL POSITION	VEH. R	RECALL	VEH. F	RECALL	NC	NE	
VEHICLE CALL MEMORY	YELLOW	/ LOCK	YELLOW	/ LOCK	NC	NE	
DOUBLE ENTRY	0	FF	0	FF	0		
WALK *	4	SEC.	_	SEC.	_	SEC.	

* 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

OL1

FLASHING DON'T WALK 1 1 **SEC**. MIN PED CLEARANCE 6 **SEC**. SEC. SEC. TYPE 3 LIMIT SEC. SEC. SEC. SEC. ALTERNATE EXTENSION ADD PER VEHICLE SEC. SEC. — SEC. MAXIMUM INITIAL * SEC. SEC. — SEC. 2 **.** O **SEC**. MAXIMUM GAP* 3 . 0 **SEC**. 3.0 **SEC**. SEC. REDUCE 0.1 SEC EVERY * — SEC. SEC.

3 **.** 0 **SEC**.

Raleigh, NC 27605

1025 Wade Avenue

35 Mph +3% Grade

NC 55 (N. Alston Avenue)

E. Main St Division 5 Durham County Durham PLAN DATE: September 2014 REVIEWED BY: J Hochanadel 750 N.Greenfield Pkwy, Garner, NC 27529 PREPARED BY: R Drayton REVIEWED BY: INIT. DATE MyPAL SIG. INVENTORY NO. 05-1030T2

DATE