#### PROJECT REFERENCE NO. |Sig. 15.5| U-3308

## 3 Phase Fully Actuated W/ EV Preemption (Durham Signal System)

### NOTES

- 1. Refer to "Road Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer
- 3. Phase 1 may be lagged.

**PROPOSED** 

 $\bigcirc$ 

N/A

 $\bigcirc$ 

- 4. Reposition signal heads #11, #21, #22, #23, #61, #62 and optical detector #10.
- 5. Set all detector units to presence mode.
- 6. Program all timing information into phase banks 1,2, and 3 unless otherwise noted.
- 7. Set phase bank 3 maximum limit to 250 seconds for 8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian
- 9. Program pedestrian heads to countdown the flashing
- "Don't Walk" time. 10. This intersection features an optical preemption
- system. Shown locations of optical detectors are conceptual only.
- 11. Upon completion of Emergency Vehicle Preemption, controller returns to normal operation. 12. Maximum times shown in timing chart are for free-run
- operation only. Coordinated signal system timing values supersede these values.
- 13. Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- 14. Reconnect and unbag signal head #11, #81, #82 and pedestrian signal heads #P41, #P42 and #P82 during this phase of construction.
- 15. Contractor shall adjust video detection zones as required.

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

Controller & Cabinet

Junction Box

Right of Way Directional Arrow

Type I Pushbutton Post

Work Area

Drums

Barricades

Rigid Conduit

Optical Detector

Video Detector

Video Detection Area

----E---- Construction Easement

—— PDE —— Permanent Drainage Easement

2-in Underground Conduit -----

	L0(	OP &	DETE	C	TC	R U	NI.	Τ	INS	STA	LL	AT	$\Gamma$	N	C	HA	RT				
										DET	ECT	OR	PR	OGF	RAMI	MIN	G				
INDUCTIVE LOOPS						TIMING			ATTRIBUTES						LOOPS	STATUS					
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	NEMA PHASE	DEL		CA	RRY ETCH)	FULL TIME	PEDESTRIAN CALL	RESERVED &	4 LNNOO	EXTENSION 2	TYPE 3 9	7 CALLING	ALTERNATE	SYSTEM LOC	ZEK	EXISTING
1 A	6×40	*	0	*	_	1	15	SEC.	ı	SEC.	-	-	-	-	Χ	-	Χ	-	-	-	*
177	0 × 10	71		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		6	_	SEC.	ı	SEC.	-	_	-	-	Χ	-	Χ	-	-	_	*
2A	6×6	*	70	*	-	2	_	SEC.	I	SEC.	_	_	-	-	Χ	_	Χ	_	-	-	*
2B	6×40	*	0	*	_	2	_	SEC.	-	SEC.	_	_	_	_	Χ	_	Χ	_	_	_	*
4 A	6×40	*	0	*	-	4	10	SEC.	-	SEC.	_	_	_	_	Χ	-	Χ	_	-	-	*
6A	6×6	*	70	*	-	6	_	SEC.	-	SEC.	_	_	-	-	Χ	-	Χ	-	_	-	*
8.4	6×40	*	0	*	_	8	10	SEC.		SEC.	_	-	-	_	Χ	-	Χ	-	_	-	*
PEDES	TRIAN	DETECT	ION												_	_					
P41,P42	N/A	N/A	N/A	_	Х	4	_	SEC.	_	SEC.	_	Χ	_	_	_	_	_	_	-	_	X
P61,P62	N/A	N/A	N/A	Х	_	6	_	SEC.	_	SEC.	_	Χ	_	_	-	_	_	_	_	Χ	_
P81 <b>,</b> P82	N/A	N/A	N/A	-	Χ	8	_	SEC.	_	SEC.	_	Χ	_	_	_	-	-	_	-	-	Χ

2033 SOFTWARE w/ 2070 CONTROLLER

\* Video Detection Zone

# PHASING DIAGRAM DETECTION LEGEND

PHASING DIAGRAM

Ø2+6

DETECTED MOVEMENT UNDETECTED MOVEMENT (OVERLAP) UNSIGNALIZED MOVEMENT

PEDESTRIAN MOVEMENT

2033 EV PREEMPTI	ON
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

EV Preempt Phases

#11

22,23 41,42 61,62 81,82<del>\*</del>

11\*

SIGNAL FACE I.D.

All Heads L.E.D.

\* See Note 14

TABLE OF OPERATION

SIGNAL

FACE

11

21

22,23

41,42

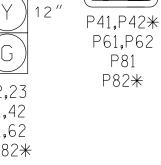
61,62

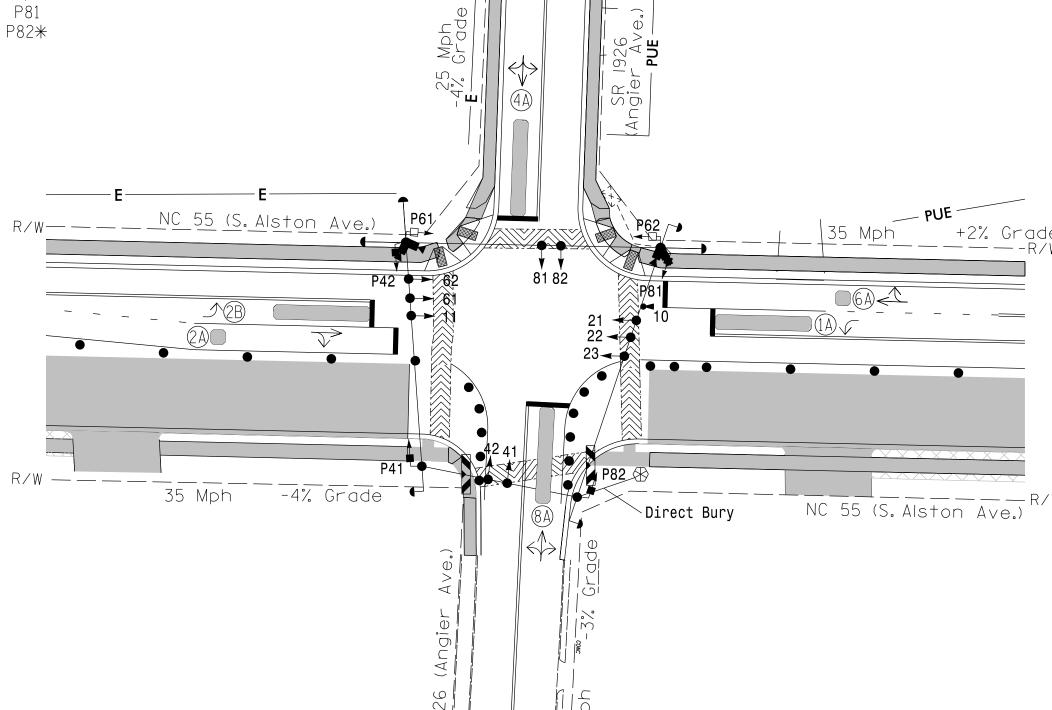
81,82

P41,P42

P61,P62

PHASE





TIMING CHART										
2033 SOFTWARE w/2070 CONTROLLER										
PHASE Ø1		Ø2	Ø4	Ø6	Ø8	OL3				
MINIMUM INITIAL *	7 <b>SEC</b> .	1 () <b>SEC</b> .	7 <b>SEC</b> .	1 () <b>SEC</b> .	7 <b>SEC</b> .	O SEC.				
VEHICLE EXTENSION *	2.0 <b>SEC</b> .	3.0 <b>SEC</b> .	2.0 <b>SEC</b> .	3.0 <b>SEC</b> .	2.0 <b>SEC</b> .					
YELLOW CHANGE INT.	3.0 <b>SEC</b> .	4.1 <b>SEC</b> .	3.4 <b>SEC</b> .	4.1 <b>SEC</b> .	4.1 <b>SEC</b> .	4 . 1 SEC.				
RED CLEARANCE	2.8 <b>SEC</b> .	2.1 <b>SEC</b> .	2.0 <b>SEC</b> .	2.1 <b>SEC</b> .	1.3 <b>SEC</b> .	2.1 <b>SEC</b> .				
MAXIMUM LIMIT *	15 <b>SEC</b> .	50 <b>SEC</b> .	35 <b>SEC</b> .	50 <b>SEC</b> .	35 <b>SEC</b> .					
RECALL POSITION	NONE	VEH. RECALL	NONE	VEH. RECALL	NONE					
VEHICLE CALL MEMORY	NONE	YELLOW LOCK	NONE	YELLOW LOCK	NONE					
DOUBLE ENTRY	OUBLE ENTRY OFF		OZ	OFF	ON					
WALK *	- SEC.	- SEC.	4 sec.	4 <b>SEC</b> .	4 SEC.					
FLASHING DON'T WALK	- SEC.	– SEC.	17 <b>SEC</b> .	8 <b>SEC</b> .	16 <b>SEC</b> .					
MIN PED CLEARANCE	- SEC.	- SEC.	9 sec.	4 SEC.	8 <b>SEC</b> .					
TYPE 3 LIMIT	- SEC.									
ALTERNATE EXTENSION	– SEC.	– SEC.	– SEC.	- SEC.	- SEC.					
ADD PER VEHICLE *	- SEC.									
MAXIMUM INITIAL *	- SEC.									
MAXIMUM GAP*	2 <b>.</b> O <b>SEC</b> .	3 <b>.</b> 0 <b>SEC</b> .	2 <b>.</b> 0 <b>SEC</b> .	3 <b>.</b> 0 <b>SEC</b> .	2 <b>.</b> 0 <b>SEC</b> .					
REDUCE 0.1 SEC EVERY *	- SEC.									
MINIMUM GAP	2 <b>.</b> O <b>SEC</b> .	3 <b>.</b> 0 <b>SEC</b> .	2 <b>.</b> 0 <b>SEC</b> .	3 <b>.</b> 0 <b>SEC</b> .	2 <b>.</b> 0 <b>SEC</b> .					
	•			•						

shown. Min Green for all other phases should not be lower than 4 seconds.

Signal Upgrade - Temporary Design 5 (TMP Phase 2, Steps 7-12) Prepared for the Offices of: NC 55 (South Alston Avenue) SR 1926 (Angier Avenue)

Division 5 Durham County

PLAN DATE: March 2015 REVIEWED BY: J Hochanadel 50 N.Greenfield Pkwy,Garner,NC 27529 PREPARED BY: C Lawson INIT. DATE

1025 Wade Avenue Raleigh, NC 27605 Tel:919-789-9977 Fax:919-789-9591 License #: C-2197

MyPAL 4/02/15 DATE

SEAL

SIG. INVENTORY NO. 05-1026T5

**EXISTING** 

**●** 

 $\longrightarrow$ 

N/A

N/A

N/A

N/A N/A

-----

DW|DW|W|DW|DRK W | W | DW | DW | DRK P81,P82 | DW | DW | W | DW | DRK