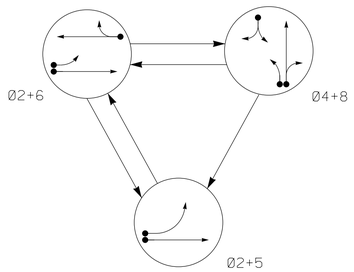
PROJECT REFERENCE NO.	SHEET NO.
U-3308	Sig. 6.0

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

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

EV Preempt Phases

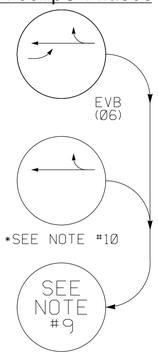
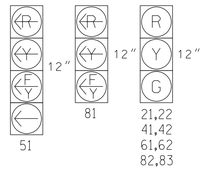


TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2+5	Ø2+6	Ø4+8	EVB	FLASH
21,22	G	G	R	R	Y
41,42	R	R	G	R	R
51	~~←~~	~~F Y~~	~~R~~	~~F Y~~	~~Y~~
61,62	R	G	R	G	Y
81	~~R~~	~~R~~	~~F Y~~	~~R~~	~~R~~
82,83	R	R	G	R	R

SIGNAL FACE I.D.

All Heads L.E.D.



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

INDUCTIVE LOOPS						DETECTOR PROGRAMMING												
							TIMING		ATTRIBUTES								STATUS	
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	NEMA PHASE	DELAY	CARRY (STRETCH)	1 FULL TIME DELAY	2 PEDESTRIAN CALL	3 RESERVED	4 COUNT	5 EXTENSION	6 TYPE 3	7 CALLING	8 ALTERNATE	SYSTEM LOOPS	NEW	EXISTING
2A	6x6	✳	70	✳	-	2	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	✳	-
4A	6x40	✳	0	✳	-	4	3 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	✳	-
5A	6x40	✳	0	✳	-	5	15 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	✳	-
						2	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	✳	-
6A	6x6	✳	70	✳	-	6	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	✳	-
8A	6x40	✳	0	✳	-	8	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	✳	-
8B	6x40	✳	0	✳	-	8	10 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	✳	-

✳ Video Detection Zone

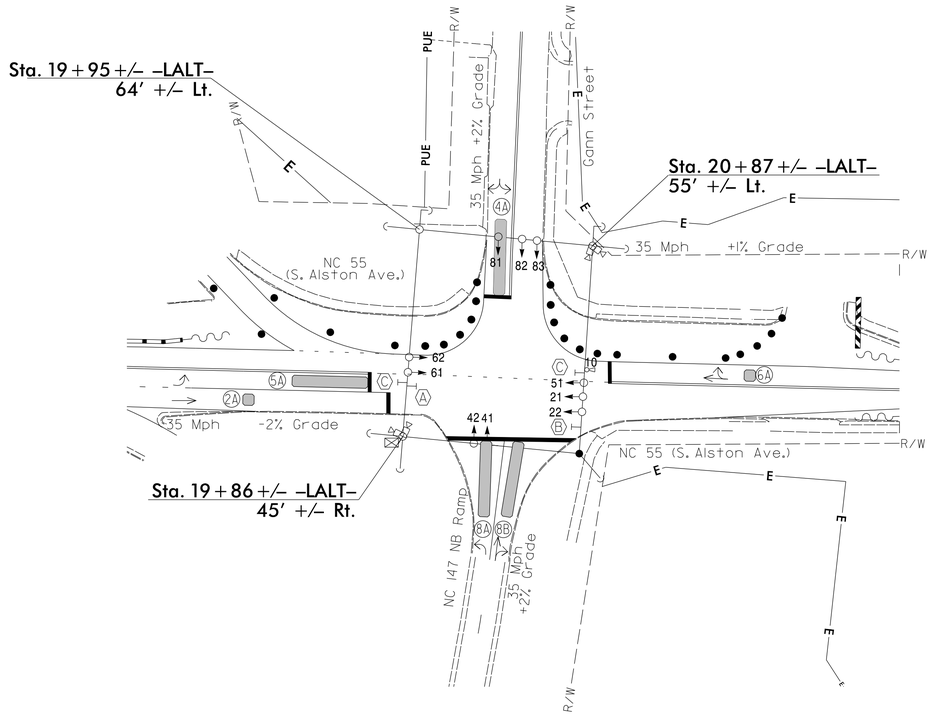
NOTES

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 5 may be lagged.
4. Set all detector units to presence mode.
5. Locate new cabinet as to not obstruct sight distance of vehicles turning on red.
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 phases used.
8. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
9. Upon completion of Emergency Vehicle Preemption, controller returns to normal operation.
10. When EVB preemption initializes during side street service signal head 51 will display a red arrow.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

2033 EV PREEMPTION

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

** Program Timing on Optical Detector Unit



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	———
→	Directional Arrow	→
Ⓐ	"No Left Turn" (R3-2)	Ⓐ
Ⓑ	"No Right Turn" (R3-1)	Ⓑ
Ⓒ	Left Arrow "ONLY" Sign (R3-5L)	Ⓒ
▭	Work Area	N/A
●	Drums	N/A
E	Construction Easement	N/A
PUE	Permanent Utility Easement	N/A
▨	Barricades	N/A
———	Direct Bury	- - - - -
○	Optical Detector	●
▭	Video Detector	■
▭	Video Detection Area	▭

TIMING CHART
2033 SOFTWARE w/2070 CONTROLLER

PHASE	Ø2	Ø4	Ø5	Ø6	Ø8	OL2
MINIMUM INITIAL *	10 SEC.	7 SEC.	7 SEC.	10 SEC.	7 SEC.	0 SEC.
VEHICLE EXTENSION *	3.0 SEC.	2.0 SEC.	2.0 SEC.	3.0 SEC.	2.0 SEC.	
YELLOW CHANGE INT.	4.0 SEC.	3.7 SEC.	4.0 SEC.	4.0 SEC.	3.7 SEC.	3.7 SEC.
RED CLEARANCE	1.8 SEC.	1.8 SEC.	2.8 SEC.	1.8 SEC.	1.8 SEC.	1.8 SEC.
MAXIMUM LIMIT *	50 SEC.	35 SEC.	15 SEC.	50 SEC.	35 SEC.	
RECALL POSITION	VEH. RECALL	NONE	NONE	VEH. RECALL	NONE	
VEHICLE CALL MEMORY	YELLOW LOCK	NONE	NONE	YELLOW LOCK	NONE	
DOUBLE ENTRY	OFF	ON	OFF	OFF	ON	
WALK *	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
FLASHING DON'T WALK	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
MIN PED CLEARANCE	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
TYPE 3 LIMIT	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
ALTERNATE EXTENSION	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
ADD PER VEHICLE *	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
MAXIMUM INITIAL *	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
MAXIMUM GAP*	3.0 SEC.	2.0 SEC.	2.0 SEC.	3.0 SEC.	2.0 SEC.	
REDUCE 0.1 SEC EVERY *	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
MINIMUM GAP	3.0 SEC.	2.0 SEC.	2.0 SEC.	3.0 SEC.	2.0 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 lower than 4 seconds.

Signal Upgrade - Temporary Design 1 (TMP Phase 1, Steps 1-10)

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

Prepared for the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

NC 55 (South Alston Avenue)
at
NC 147 NB Ramp / Gann Street
Division 5 Durham County Durham

PLAN DATE: September 2014 REVIEWED BY: J Hochanadel
PREPARED BY: C Lawson REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 28430 ENGINEER JEFFREY P. HOCHANADEL

DocuSigned by: 4/02/15
5D781D2BF9BC498...
DATE

SIG. INVENTORY NO. 05-0284TI