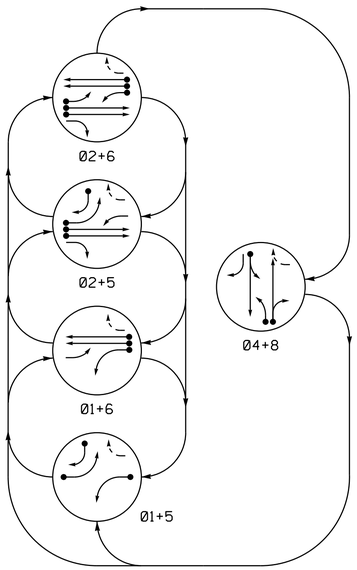
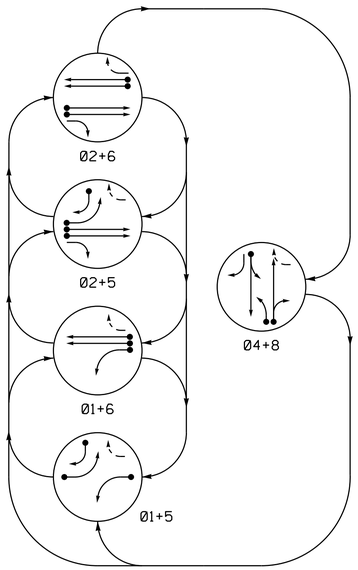
PROJECT REFERENCE NO.	SHEET NO.
05-1927	Sig. 1

5 Phase
Fully Actuated
(Durham Signal System)

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	04+8	FLASH
11	←	←	F Y	F Y	R	Y
21, 22	R	R	G	G	R	Y
41	R	R	R	R	G	R
42	R / ←	R	R / ←	R	G	R
51	←	F Y	←	F Y	R	Y
61, 62	R	G	R	G	R	Y
81	R	R	R	R	F Y	R
82, 83	R	R	R	R	G	R

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	04+8	FLASH
11	←	←	R	R	R	Y
21, 22	R	R	G	G	R	Y
41	R	R	R	R	G	R
42	R / ←	R	R / ←	R	G	R
51	←	R	←	R	R	Y
61, 62	R	G	R	G	R	Y
81	R	R	R	R	F Y	R
82, 83	R	R	R	R	G	R

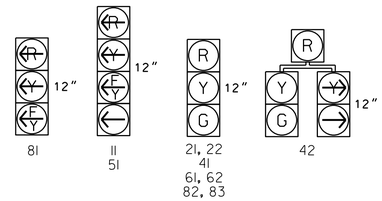
2033 SOFTWARE w/ 2070 CONTROLLER LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS						DETECTOR PROGRAMMING															
							TIMING		ATTRIBUTES										LOOPS	STATUS	
									1	2	3	4	5	6	7	8			
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
1A	6X40	2-4-2	0	X	-	1	15* SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
						6#	3 SEC.	- SEC.	X	-	-	-	X	-	X	-	-	X	-
2A	6X6	5	300	X	-	2	- SEC.	- SEC.	-	-	-	X	X	-	X	-	-	X	-
2B	6X6	5	300	X	-	2	- SEC.	- SEC.	-	-	-	X	X	-	X	-	-	X	-
4A	6X40	2-4-2	0	X	-	4	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
5A	6X40	2-4-2	0	X	-	5	15* SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
						2#	3 SEC.	- SEC.	X	-	-	-	X	-	X	-	-	X	-
5B	6X40	2-4-2	0	X	-	5	15 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
6A	6X6	5	300	X	-	6	- SEC.	- SEC.	-	-	-	X	X	-	X	-	-	X	-
6B	6X6	5	300	X	-	6	- SEC.	- SEC.	-	-	-	X	X	-	X	-	-	X	-
8A	6X40	2-4-2	0	X	-	8	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
8B	6X40	2-4-2	0	X	-	8	10 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-

* Disable Delay During Alternate Phasing Operation.
\# Disable Phase Call For Loop(s) During Alternate Phasing Operation.

SIGNAL FACE I.D.

All Heads L.E.D.



NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right 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. The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

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	
	Metal Pole with Mastarm	
Ⓐ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓐ
Ⓑ	Right Arrow "ONLY" Sign (R3-5R)	Ⓑ

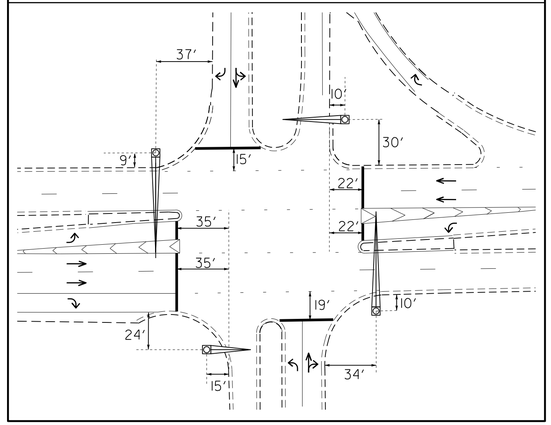
TIMING CHART

2033 SOFTWARE w/ 2070 CONTROLLER

PHASE	01	02	04	05	06	08	OL 2
MINIMUM INITIAL *	7 SEC.	12 SEC.	7 SEC.	7 SEC.	12 SEC.	7 SEC.	
VEHICLE EXTENSION *	2.0 SEC.	6.0 SEC.	2.0 SEC.	2.0 SEC.	6.0 SEC.	2.0 SEC.	
YELLOW CHANGE INT.	3.0 SEC.	4.6 SEC.	3.1 SEC.	3.0 SEC.	4.6 SEC.	3.1 SEC.	3.1 SEC.
RED CLEARANCE	3.1 SEC.	1.7 SEC.	3.1 SEC.	3.2 SEC.	1.7 SEC.	3.1 SEC.	3.1 SEC.
MAXIMUM LIMIT *	15 SEC.	90 SEC.	30 SEC.	15 SEC.	90 SEC.	30 SEC.	
RECALL POSITION	NONE	VEH. RECALL	NONE	NONE	VEH. RECALL	NONE	
VEHICLE CALL MEMORY	NONLOCK	YELLOW LOCK	NONLOCK	NONLOCK	YELLOW LOCK	NONLOCK	
DOUBLE ENTRY	OFF	OFF	ON	OFF	OFF	OFF	
WALK *	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
FLASHING DON'T WALK	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
TYPE 3 LIMIT	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
ALTERNATE EXTENSION	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	
ADD PER VEHICLE *	– SEC.	1.5 SEC.	– SEC.	– SEC.	1.5 SEC.	– SEC.	
MAXIMUM INITIAL *	– SEC.	34 SEC.	– SEC.	– SEC.	34 SEC.	– SEC.	
MAXIMUM GAP*	2.0 SEC.	7.0 SEC.	2.0 SEC.	2.0 SEC.	7.0 SEC.	2.0 SEC.	
REDUCE 0.1 SEC EVERY *	– SEC.	1.5 SEC.	– SEC.	– SEC.	1.5 SEC.	– SEC.	
MINIMUM GAP	2.0 SEC.	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.

Proposed Metal Pole and Stop Line Locations



New Installation

Prepared In the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

SR 1978 (Hopson Road)
at
Environmental Protection Agency
and Biogen

Division 5 Durham County RTP

PLAN DATE: August 2018 REVIEWED BY:

PREPARED BY: C.E. Carter REVIEWED BY:

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA

DocuSigned by: Robert J. Ziemba 9/6/2018
SIGNATURE DATE

SIG. INVENTORY NO. 05-1927

12-SEP-2018 10:44
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rziemba