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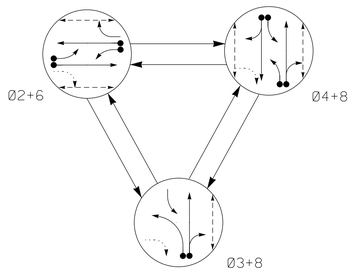
PROJECT REFERENCE NO.	SHEET NO.
U-3308	Sig. 46.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

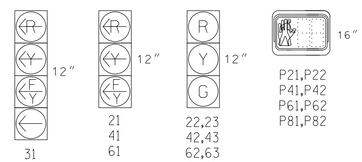
SIGNAL FACE	PHASE Ø2+6	PHASE Ø3+8	PHASE Ø4+8	FLASH
21	~~F Y~~	~~R~~	~~R~~	~~Y~~
22,23	G	R	R	Y
31	~~R~~	~~F Y~~	~~F Y~~	~~R~~
41	~~R~~	~~F Y~~	~~F Y~~	~~R~~
42,43	R	R	G	R
61	~~F Y~~	~~R~~	~~R~~	~~Y~~
62,63	G	R	R	Y
81,82	R	G	G	R
P21,P22	W	DW	DW	DRK
P41,P42	DW	DW	W	DRK
P61,P62	W	DW	DW	DRK
P81,P82	DW	W	W	DRK

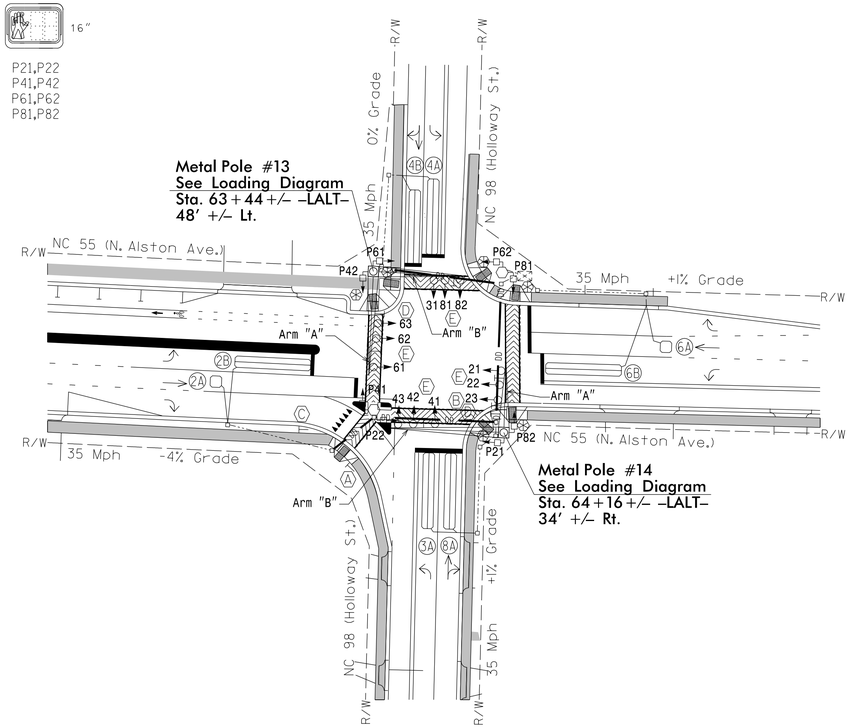
2033 SOFTWARE w/ 2070 CONTROLLER LOOP & DETECTOR UNIT INSTALLATION CHART

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 PEDESTRIAN	2 PEDESTRIAN CALL	3 RESERVED	4 COUNT	5 EXTENSION	6 TYPE 3	7 CALLING	8 ALTERNATE	SYSTEM LOOPS	NEW	EXISTING
2A	6x6	4	70	X	-	2	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
2B	6x40	2-4-2	0	X	-	2	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
3A	6x40	2-4-2	0	X	-	3	15 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
						8	3 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
4A	6x40	2-4-2	0	X	-	4	3 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
4B	6x40	2-4-2	0	X	-	4	10 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
6A	6x6	4	70	X	-	6	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
6B	6x40	2-4-2	0	X	-	6	- SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
8A	6x40	2-4-2	0	X	-	8	10 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-
PEDESTRIAN DETECTION																			
P21,P22	N/A	N/A	N/A	X	-	2	- SEC.	- SEC.	-	X	-	-	-	-	-	-	-	-	X
P41,P42	N/A	N/A	N/A	X	-	4	- SEC.	- SEC.	-	X	-	-	-	-	-	-	-	-	X
P61,P62	N/A	N/A	N/A	X	-	6	- SEC.	- SEC.	-	X	-	-	-	-	-	-	-	-	X
P81,P82	N/A	N/A	N/A	X	-	8	- SEC.	- SEC.	-	X	-	-	-	-	-	-	-	-	X

SIGNAL FACE I.D.

All Heads L.E.D.





TIMING CHART

2033 SOFTWARE w/2070 CONTROLLER

PHASE	Ø2	Ø3	Ø4	Ø6	Ø8	OL1	OL3	OL4
MINIMUM INITIAL *	10 SEC.	7 SEC.	7 SEC.	10 SEC.	7 SEC.	0 SEC.	0 SEC.	0 SEC.
VEHICLE EXTENSION *	3.0 SEC.	2.0 SEC.	2.0 SEC.	3.0 SEC.	2.0 SEC.			
YELLOW CHANGE INT.	4.1 SEC.	3.8 SEC.	3.8 SEC.	4.1 SEC.	3.8 SEC.	4.1 SEC.	4.1 SEC.	3.8 SEC.
RED CLEARANCE	1.8 SEC.	2.3 SEC.	2.0 SEC.	1.8 SEC.	2.0 SEC.	1.8 SEC.	1.8 SEC.	2.0 SEC.
MAXIMUM LIMIT *	50 SEC.	15 SEC.	35 SEC.	50 SEC.	35 SEC.	50 SEC.	50 SEC.	50 SEC.
RECALL POSITION	VEH. RECALL	NONE	NONE	VEH. RECALL	NONE			
VEHICLE CALL MEMORY	YELLOW LOCK	NONE	NONE	YELLOW LOCK	NONE			
DOUBLE ENTRY	OFF	OFF	ON	OFF	ON			
WALK *	4 SEC.	- SEC.	4 SEC.	4 SEC.	4 SEC.			
FLASHING DON'T WALK	9 SEC.	- SEC.	10 SEC.	8 SEC.	12 SEC.			
MIN PED CLEARANCE	5 SEC.	- SEC.	5 SEC.	4 SEC.	6 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 phass should not be lower than 4 seconds.

3 Phase
Fully Actuated
(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 3 may be lagged.
4. Set all detector units to presence mode.
5. Program all timing information into phase banks 1,2, and 3 unless otherwise noted.
6. Set phase bank 3 maximum limit to 250 seconds for phases used.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
10. Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.

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	
DD	Directional Drill	N/A
A	"Yield" Sign (R1-2)	A
B	"Turning Traffic Must Yield to Pedestrians" Sign (R10-15)	B
C	"Pedestrian Traffic" Sign (W11-2)	C
D	Right Arrow "Only" Sign (R3-5R)	D
E	Street Name Sign	E
	Type I Pushbotton Post	
	Type II Signal Pedestal	
	Metal Pole with Mastarm	

Signal Upgrade - Final Design

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
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 1"=40'

NC 55 (North Alston Avenue) at NC 98 (Holloway Street)

Division 5 Durham County Durham

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

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 28430 ENGINEER JEFFREY P. HOCHNADEL

DocuSigned by:
50781D2BF98C498...
4/02/15
DATE

SIG. INVENTORY NO. 05-1027

3/20/2015
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