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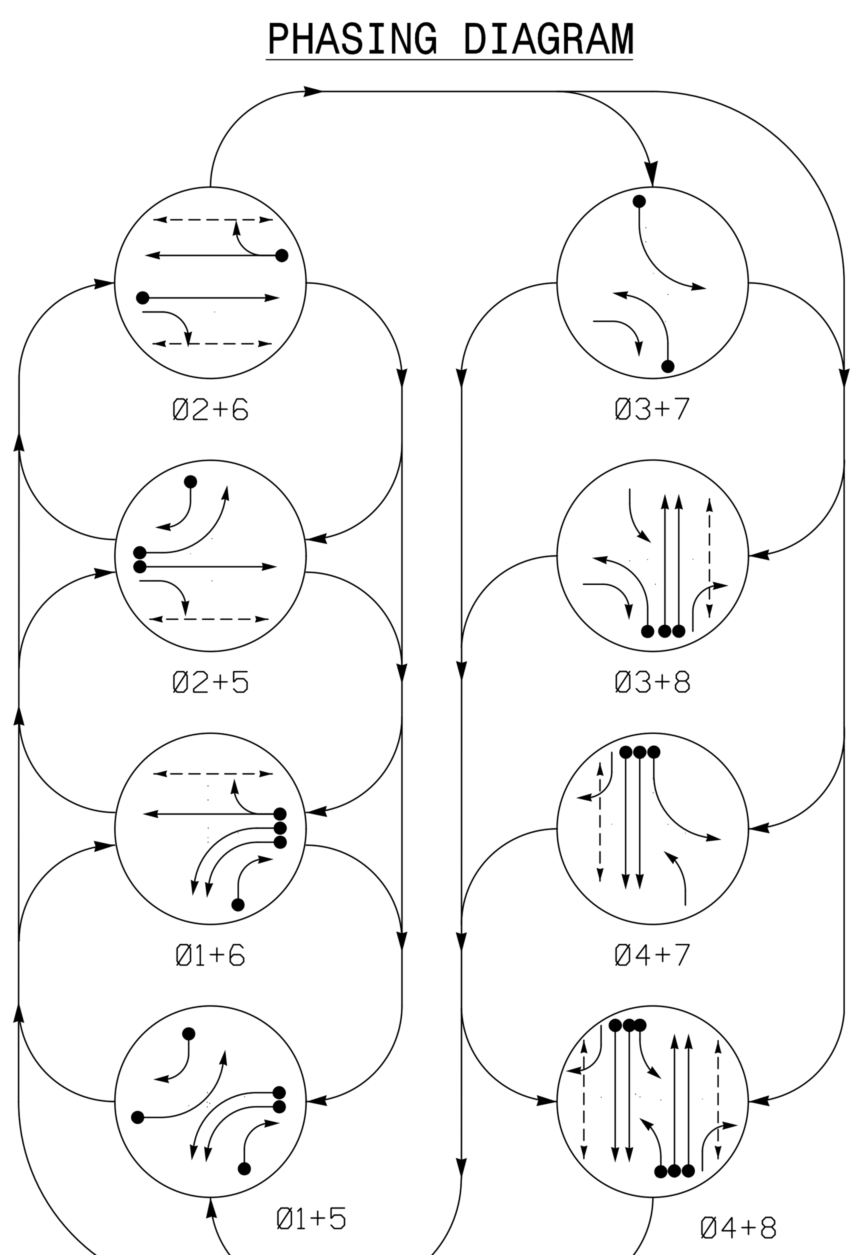
PROJECT REFERENCE NO.	SHEET NO.
U-5828	SIG. 14

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

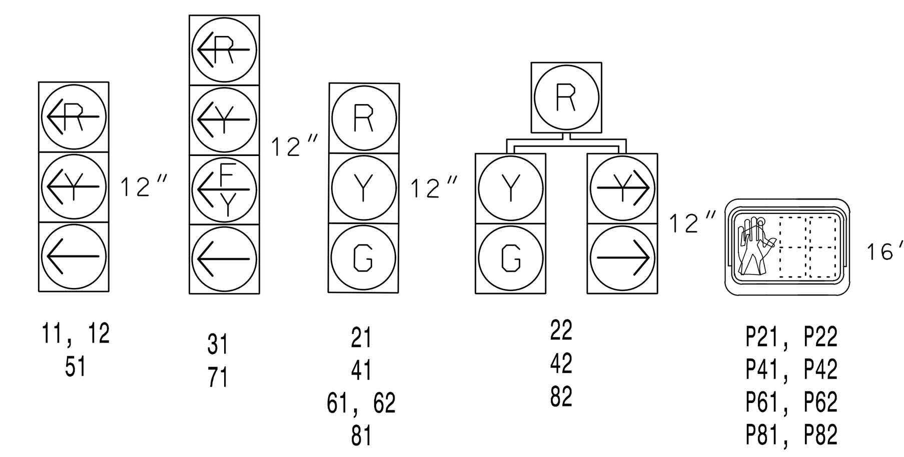
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3+7	Ø3+8	Ø4+7	Ø4+8	FLASH
11, 12	←	←	←R	←R	←R	←R	←R	←R	←R
21	R	R	G	G	R	R	R	R	Y
22	R	R	G	G	R/→	R/→	R	R	Y
31	←R	←R	←R	←R	←	←	←F/Y	←F/Y	←R
41	R	R	R	R	R	R	G	G	R
42	R/→	R	R/→	R	R	R	G	G	R
51	←	←R	←	←R	←R	←R	←R	←R	←R
61, 62	R	G	R	G	R	R	R	R	Y
71	←R	←R	←R	←R	←	←F/Y	←	←F/Y	←R
81	R	R	R	R	R	G	R	G	R
82	R/→	R/→	R	R	R	G	R	G	R
P21, P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	DW	DW	DW	W	W	DRK
P62, P62	DW	W	DW	W	DW	DW	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



LOOP & DETECTOR INSTALLATION CHART

ASC/3-2070LN2 CONTROLLER w/ TS-2 CABINET

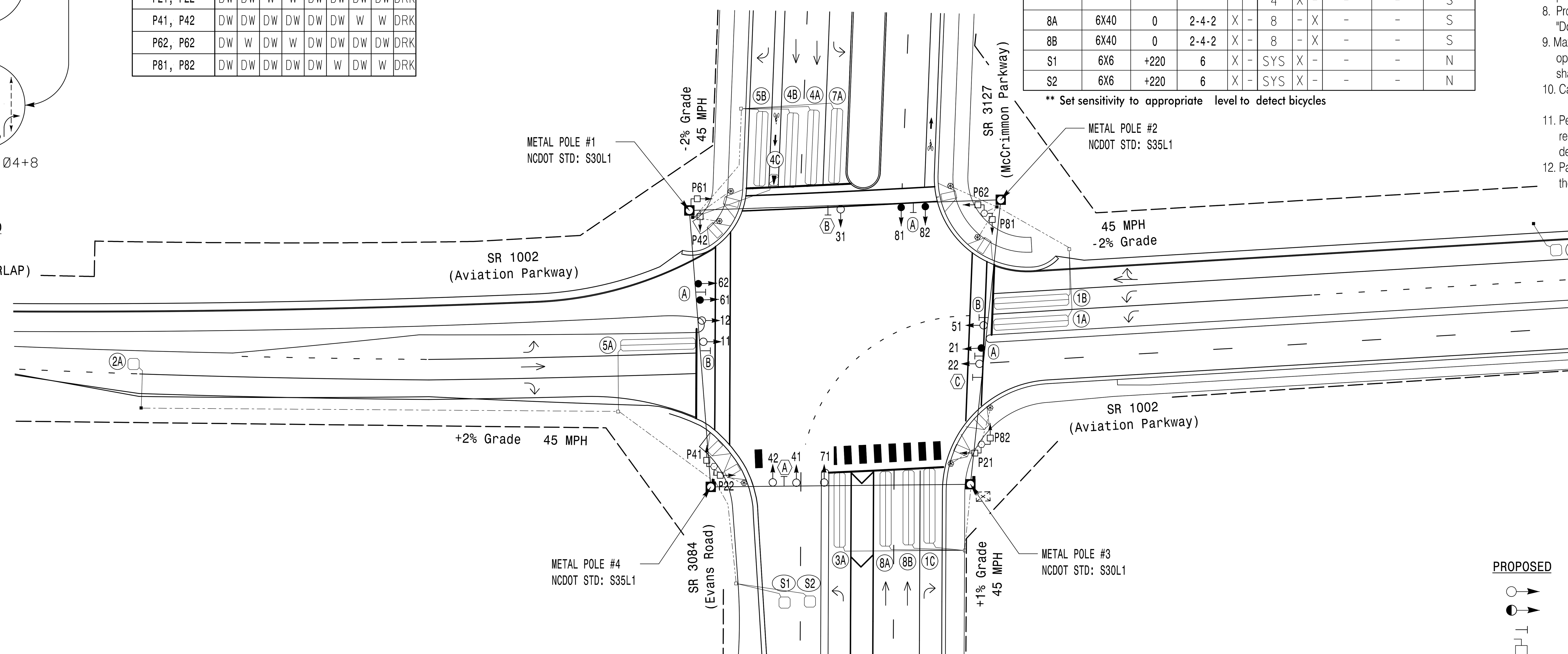
INDUCTIVE LOOPS: LOOP NO.	SIZE (ft)	DIST. FROM STOPBAR (ft)	TURNS	NEW	EXISTING	DETECTOR UNITS: NEMA PHASE	NEW	EXISTING	TIMING: FEATURE	TIME (sec)	DET. TYPE
1A	6X40	0	2-4-2	X	-	1	-	X	-	-	S
1B	6X40	0	2-4-2	X	-	1	-	X	-	-	S
1C	6X40	0	2-4-2	X	-	1	-	X	DELAY	15	S
2A	6X6	300	6	X	-	2	-	X	-	-	N
3A	6X40	0	2-4-2	X	-	3	X	-	DELAY	15	S
						8	X	-	-	-	S
4A	6X40	0	2-4-2	X	-	4	-	X	-	-	S
4B	6X40	0	2-4-2	X	-	4	X	-	-	-	S
**4C	5X6	0	2-4-2 DIAGONAL	X	-	4	X	-	-	-	S
5A	6X40	0	2-4-2	X	-	5	X	-	-	-	S
5B	6X40	0	2-4-2	X	-	5	X	-	DELAY	15	S
6A	6X6	300	6	X	-	6	-	X	-	-	N
7A	6X40	0	2-4-2	X	-	7	X	-	DELAY	15	S
						4	X	-	-	-	S
8A	6X40	0	2-4-2	X	-	8	-	X	-	-	S
8B	6X40	0	2-4-2	X	-	8	-	X	-	-	S
S1	6X6	+220	6	X	-	SYS	X	-	-	-	N
S2	6X6	+220	6	X	-	SYS	X	-	-	-	N

** Set sensitivity to appropriate level to detect bicycles

8 Phase
Fully Actuated
(Cary Signal System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx
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. Phase 3 and/or phase 7 may be lagged.
5. Reposition existing signal head 81 and 82.
6. Set all detector units to presence mode.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
10. Cary signal system data:
    Fiber channel #: 17.
11. Pedestrians pedestals are conceptual and shown for reference only. See sheet P1-P3 for pushbuttons locations details.
12. Paint new bicycle markings (as shown on page 9C.05 of the 2009 edition of the MUTCD) in the center of loop 4C.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Type I Pushbutton Post	
	Type II Signal Pedestal	
	Metal Strain Pole	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way with Marker	
	Directional Arrow	
Ⓐ	Street Sign (D3-1)	Ⓐ
Ⓑ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓑ
Ⓒ	Right Arrow "ONLY" Sign (R3-5R)	Ⓒ

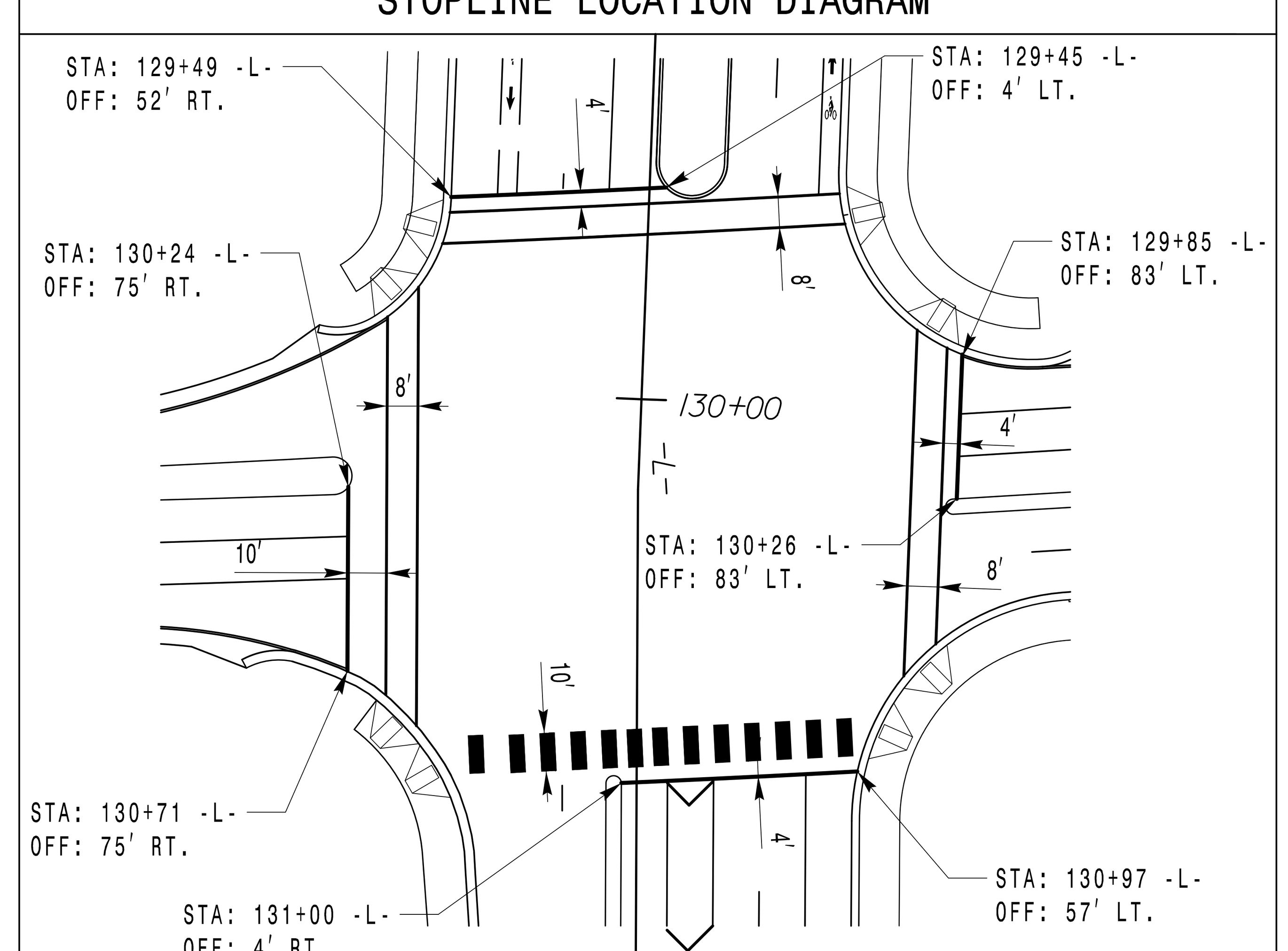
TIMING CHART

ASC/3-2070LN2 CONTROLLER

PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN *	7 SEC.	12 SEC.	7 SEC.	12 SEC.	7 SEC.	12 SEC.	7 SEC.	12 SEC.
VEHICLE EXT. *	2.0 SEC.	6.0 SEC.	2.0 SEC.	2.0 SEC.	2.0 SEC.	6.0 SEC.	2.0 SEC.	2.0 SEC.
DELAYED GREEN. *	– SEC.	5.0 SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.
YELLOW CHANGE INT.	3.0 SEC.	4.3 SEC.	3.0 SEC.	4.7 SEC.	3.0 SEC.	4.7 SEC.	3.0 SEC.	4.7 SEC.
RED CLEARANCE	3.9 SEC.	2.3 SEC.	3.4 SEC.	2.2 SEC.	3.8 SEC.	2.2 SEC.	3.6 SEC.	2.2 SEC.
MAX. 1 *	30 SEC.	90 SEC.	30 SEC.	20 SEC.	20 SEC.	90 SEC.	20 SEC.	20 SEC.
RECALL POSITION	NONE	MIN. RECALL	NONE	NONE	NONE	MIN. RECALL	NONE	NONE
LOCK DET.	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
WALK *	– SEC.	7 SEC.	– SEC.	7 SEC.	– SEC.	7 SEC.	– SEC.	7 SEC.
PED. CLEAR	– SEC.	29 SEC.	– SEC.	27 SEC.	– SEC.	26 SEC.	– SEC.	22 SEC.
VOLUME DENSITY	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
ACTUATION B4 ADD *	– VEH.	0 VEH.	– VEH.	– VEH.	– VEH.	0 VEH.	– VEH.	– VEH.
SEC. PER ACTUATION *	– SEC.	2.5 SEC.	– SEC.	– SEC.	– SEC.	2.5 SEC.	– SEC.	– SEC.
MAX. INITIAL *	– SEC.	34 SEC.	– SEC.	– SEC.	– SEC.	34 SEC.	– SEC.	– SEC.
TIME B4 REDUCTION *	– SEC.	15 SEC.	– SEC.	– SEC.	– SEC.	15 SEC.	– SEC.	– SEC.
TIME TO REDUCE *	– SEC.	45 SEC.	– SEC.	– SEC.	– SEC.	45 SEC.	– SEC.	– SEC.
MINIMUM GAP	– SEC.	3.0 SEC.	– SEC.	– SEC.	– SEC.	3.0 SEC.	– SEC.	– SEC.
DUAL ENTRY	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
SIMULTANEOUS GAP	ON	ON	ON	ON	ON	ON	ON	ON

* 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.

STOPLINE LOCATION DIAGRAM



NC Dept of Transportation
Division of Highways
Final Drawing Date: 10/10/2016
ITS & Signals Unit

SIGNAL UPGRADE - FINAL DESIGN

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED IN THE OFFICE OF:
Kimley»Horn
NC License #F-0102
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Raleigh, NC 27601
(919) 677-2000

Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 1"=40'

SR 1002 (Aviation Parkway)
at
SR 3127 (McCrimmon Parkway)/
SR 3084 (Evans Road)

Division 5 Wake County Morrisville

PLAN DATE: APRIL 2016	REVIEWED BY: SL PHILLIPS
PREPARED BY: SP PENNINGTON	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 032607 ENGINEER STACIE L. PHILLIPS

DocuSigned by:
SIGNATURE 9/22/2016 DATE

SIG. INVENTORY NO. 05-1533

K:*RAL_Roadway*012108004 - McCrimmon Parkway*Phase II*Plan*Signals*54 - Signal Design*14 05-1533_2016.dgn
susan.pennington
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9/22/2016