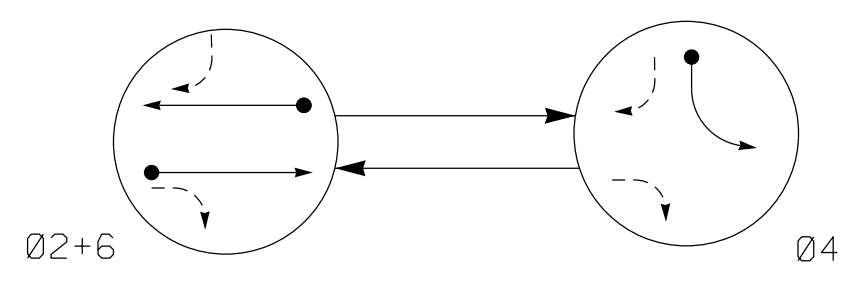


PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

EV PREEMPT PHASES

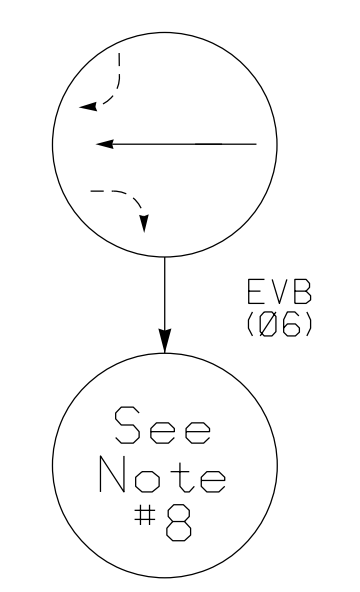
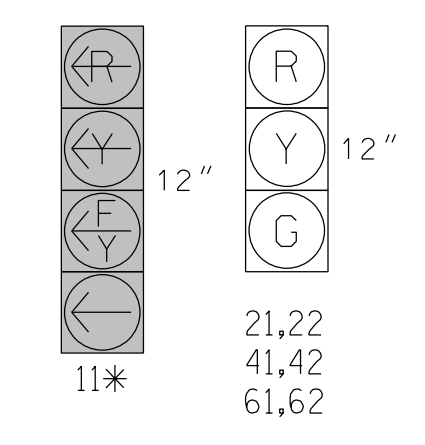


TABLE OF OPERATION

SIGNAL FACE	PHASE			
	02+6	04	EVB	FLASH
21,22	G	R	R	Y
41,42	R	G	R	R
61,62	G	R	G	Y

SIGNAL FACE I.D.

All Heads L.E.D.
* - See Note 10.



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

LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW EXISTING	NEMA PHASE	DETECTOR PROGRAMMING																			
						TIMING		ATTRIBUTES								STATUS									
						DELAY	CARRY (STRETCH)	1	2	3	4	5	6	7	8	9	10	11	12	NEW	EXISTING				
2A	6x6	*	70	*	-	2	- SEC.	- SEC.	-	-	-	-	-	X	-	X	-	-	-	-	-	-	-	-	*
4A	6x40	*	0	*	-	4	- SEC.	- SEC.	-	-	-	-	-	X	-	X	-	-	-	-	-	-	-	-	*
6A	6x6	*	70	*	-	6	- SEC.	- SEC.	-	-	-	-	-	X	-	X	-	-	-	-	-	-	-	-	*

* Video Detection Zone

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

NOTES

- Refer to "Road Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Reposition signal heads #11, #21, #22, #61, and #62 during this phase of construction.
- Set all detector units to presence mode.
- Program all timing information into phase banks 1,2, and 3 unless otherwise noted.
- Set phase bank 3 maximum limit to 250 seconds for phases used.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- Upon completion of Emergency Vehicle Preemption, controller returns to normal operation based on vehicle demand.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Bag and disconnect signal head #11 during this phase of construction.
- Contractor shall adjust video detection zones as required.

2033 EV PREEMPTION

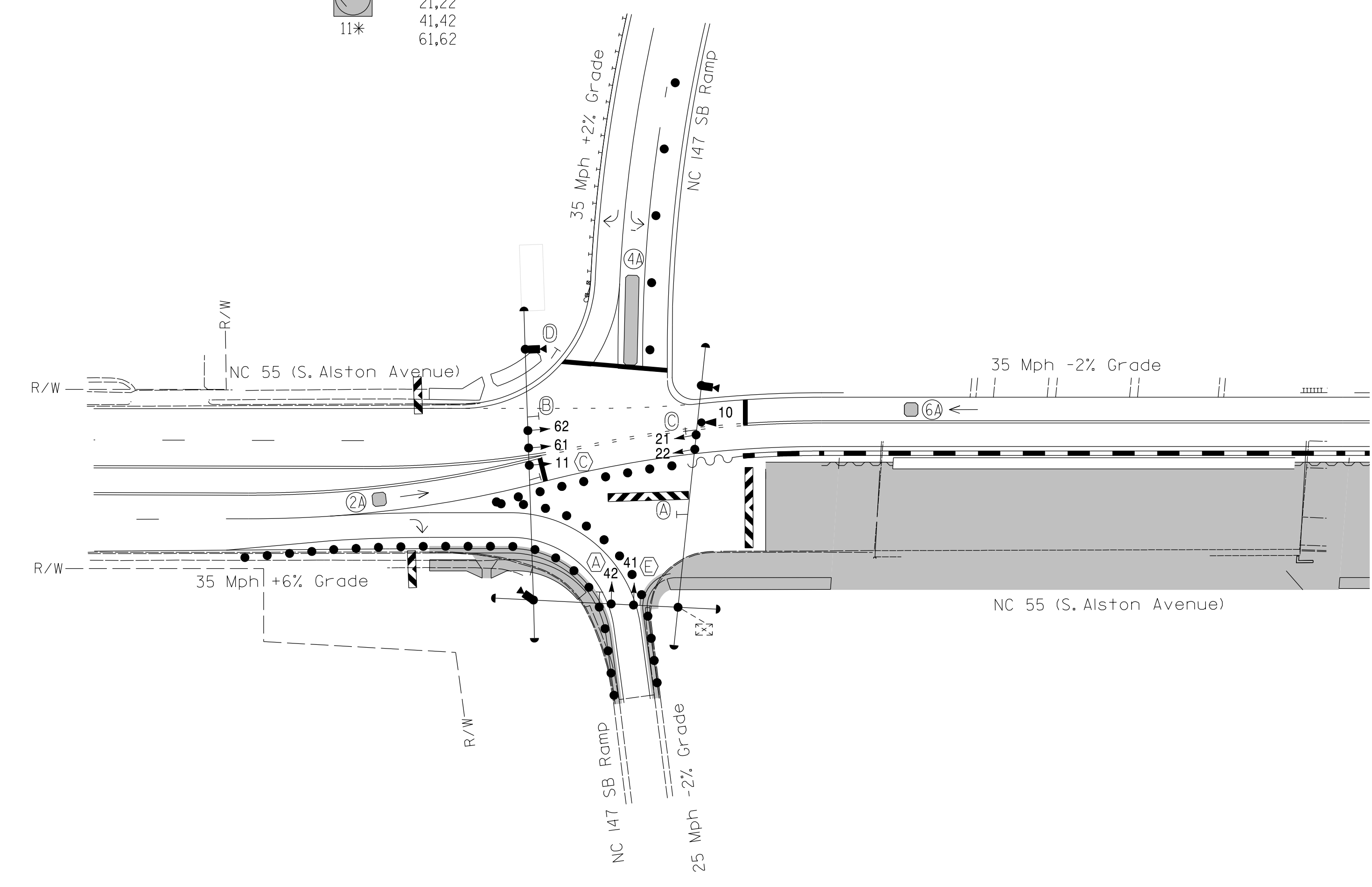
FUNCTION	EVB (SECONDS)
DELAY BEFORE PREEMPT	0
MIN. PED. CLEAR BEFORE PREEMPT	0
MIN. GREEN BEFORE PREEMPT	1
CLEARANCE TIME	2
PREEMPT EXTEND**	2.0

** Program Timing on Optical Detector Unit

TIMING CHART
2033 SOFTWARE w/2070 CONTROLLER

PHASE	02	04	06
MINIMUM INITIAL *	10 SEC.	7 SEC.	10 SEC.
VEHICLE EXTENSION *	3.0 SEC.	2.0 SEC.	3.0 SEC.
YELLOW CHANGE INT.	3.5 SEC.	3.0 SEC.	4.0 SEC.
RED CLEARANCE	1.2 SEC.	1.4 SEC.	1.7 SEC.
MAXIMUM LIMIT *	50 SEC.	35 SEC.	50 SEC.
RECALL POSITION	VEH. RECALL	NONE	VEH. RECALL
VEHICLE CALL MEMORY	YELLOW LOCK	NONE	YELLOW LOCK
DOUBLE ENTRY	OFF	OFF	OFF
WALK *	- SEC.	- SEC.	- SEC.
FLASHING DON'T WALK	- SEC.	- SEC.	- SEC.
MIN PED CLEARANCE	- SEC.	- SEC.	- SEC.
TYPE 3 LIMIT	- SEC.	- SEC.	- SEC.
ALTERNATE EXTENSION	- SEC.	- SEC.	- SEC.
ADD PER VEHICLE *	- SEC.	- SEC.	- SEC.
MAXIMUM INITIAL *	- SEC.	- SEC.	- SEC.
MAXIMUM GAP*	3.0 SEC.	2.0 SEC.	3.0 SEC.
REDUCE 0.1 SEC EVERY *	- SEC.	- SEC.	- SEC.
MINIMUM GAP	3.0 SEC.	2.0 SEC.	3.0 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.



LEGEND

PROPOSED	EXISTING
○ → Traffic Signal Head	● → N/A
○ → Modified Signal Head	○ → N/A
○ → Pedestrian Signal Head With Push Button & Sign	○ → N/A
○ → Signal Pole with Guy	○ → N/A
○ → Signal Pole with Sidewalk Guy	○ → N/A
○ → Inductive Loop Detector	○ → N/A
○ → Controller & Cabinet	○ → N/A
○ → Junction Box	○ → N/A
○ → 2-in Underground Conduit	○ → N/A
○ → Right of Way	○ → N/A
○ → Directional Arrow	○ → N/A
○ → Right Arrow "Only" Sign (R3-5R)	○ → N/A
○ → No Right Turn Sign (R3-1)	○ → N/A
○ → No Left Turn Sign (R3-2)	○ → N/A
○ → "YIELD" Sign (R1-2)	○ → N/A
○ → Left Arrow "Only" Sign (R3-5L)	○ → N/A
○ → Work Area	○ → N/A
○ → Drums	○ → N/A
○ → Optical Detector	○ → N/A
○ → Video Detector	○ → N/A
○ → Video Detection Area	○ → N/A
○ → Direct Bury	○ → N/A

Signal Upgrade - Temporary Design 4 (TMP Phase 2 , Steps 1-6)

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Prepared For the Offices of:
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750 N. Greenfield Pkwy, Garner, NC 27529

NC 55 (South Alston Avenue) at NC 147 SB Ramps
Division 5 Durham County Durham
PLAN DATE: September 2014 REVIEWED BY: J Hochanadel
PREPARED BY: A Drayton REVIEWED BY:

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
28430
JERRY P. HOCHANADEL
DocuSigned by:
4/02/15
50781028F8C498
SIG. INVENTORY NO. 05-1028T4

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