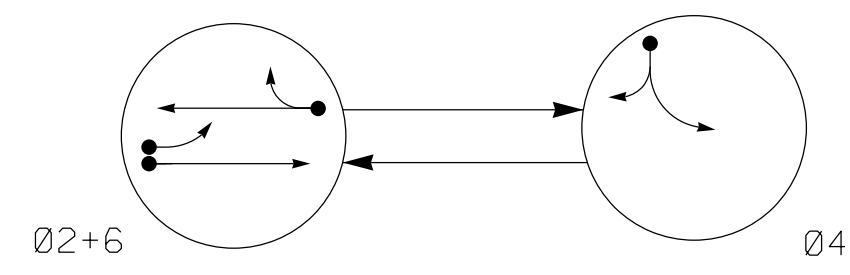


PHASING DIAGRAM



**PHASING DIAGRAM DETECTION LEGEND**  
 ● DETECTED MOVEMENT  
 ◐ UNDETECTED MOVEMENT (OVERLAP)  
 - - - UNSIGNALIZED MOVEMENT  
 ◀ - - - PEDESTRIAN MOVEMENT

EV Preempt Phases

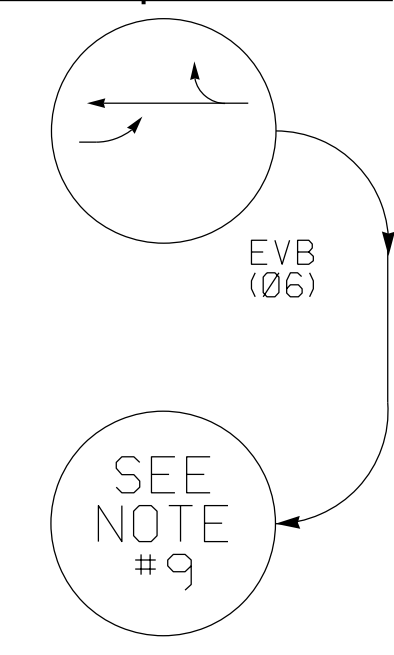


TABLE OF OPERATION

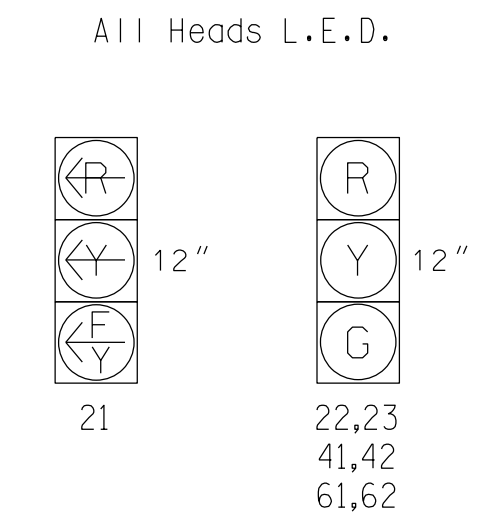
SIGNAL FACE	PHASE			
	02+6	04	EVB (06)	0L3
21	F	R	F	Y
22,23	G	R	R	Y
41,42	R	G	R	R
61,62	G	R	G	Y

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												STATUS		
						TIMING		ATTRIBUTES												
						DELAY	CARRY (STRETCH)	1 FULL TIME DELAY	2 PEDESTRIAN CALL	3 RESERVED	4 COUNT	5 EXTENSION	6 TYPE 3	7 CALLING	8 ALTERNATE	9 SYSTEM	10 LOOPS		11 NEW	12 EXISTING
2A	6x6	*	70	*	-	2	- SEC.	- SEC.	-	-	-	-	-	X	-	X	-	-	*	-
2B	6x40	*	0	*	-	2	- SEC.	- SEC.	-	-	-	-	-	X	-	X	-	-	*	-
4A	6x40	*	0	*	-	4	10 SEC.	- SEC.	-	-	-	-	-	X	-	X	-	-	*	-
6A	6x6	*	70	*	-	6	- SEC.	- SEC.	-	-	-	-	-	X	-	X	-	-	*	-

\* Video Detection Zone

SIGNAL FACE I.D.



2033 EV PREEMPTION

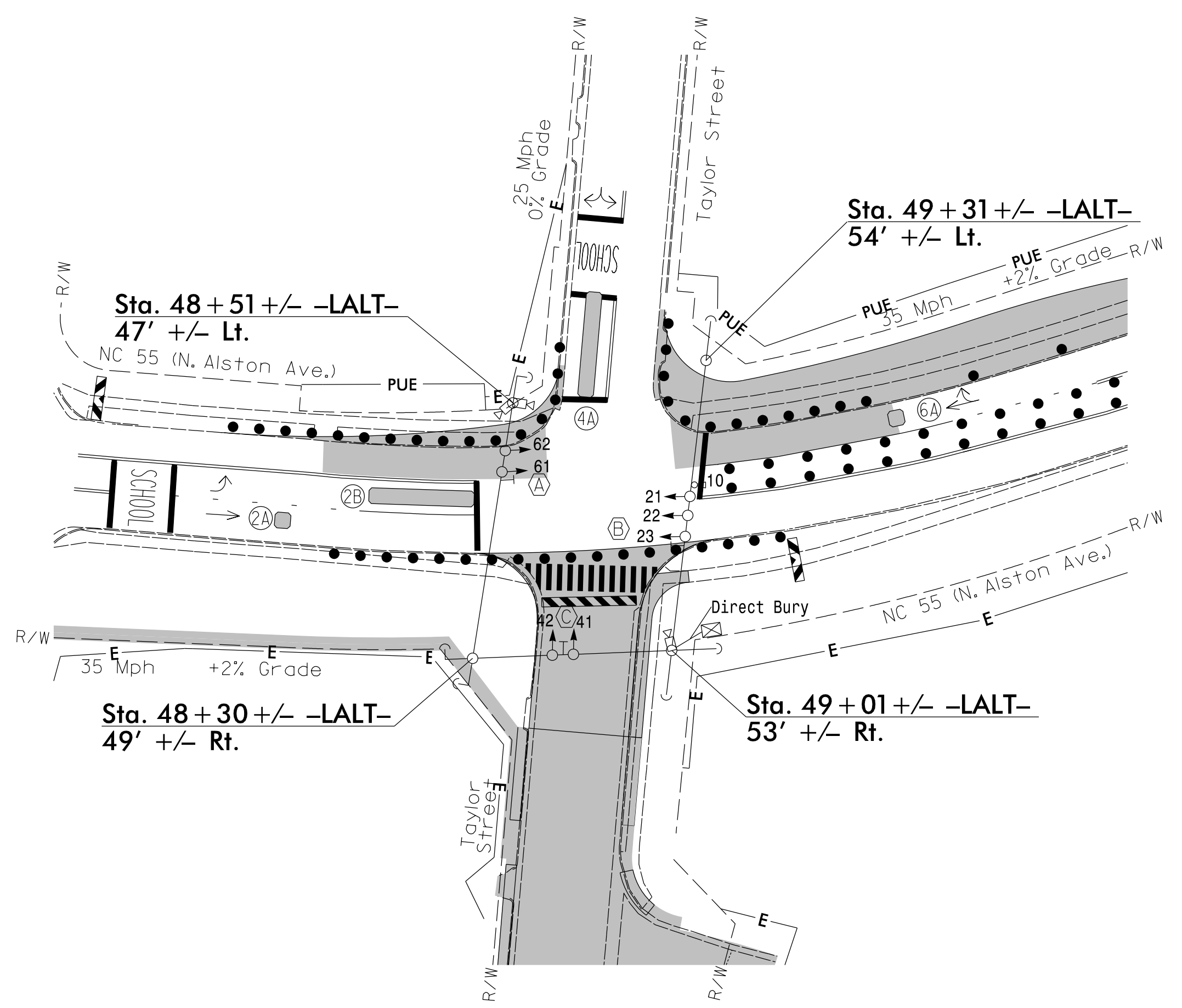
FUNCTION	EVB (SECONDS)
DELAY BEFORE PREEMPT	0
MIN. PED. CLEAR BEFORE PREEMPT	0
MIN. GREEN BEFORE PREEMPT	1
CLEARANCE TIME	2
PREEMPT EXTEND**	2.0

\*\* Program Timing on Optical Detector Unit

2 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.
- Set all detector units to presence mode.
- Locate new cabinet as to not obstruct sight distance of vehicles turning right on red.
- 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.
- Pavement markings are existing.
- 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.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Contractor to maintain pedestrian movements through Taylor Street construction areas.



**LEGEND**

PROPOSED	EXISTING
	N/A
N/A	
	N/A
	N/A
	N/A
	N/A
	N/A

**TIMING CHART**  
 2033 SOFTWARE w/2070 CONTROLLER

PHASE	02	04	06	0L3
MINIMUM INITIAL *	10 SEC.	7 SEC.	10 SEC.	0 SEC.
VEHICLE EXTENSION *	3.0 SEC.	2.0 SEC.	3.0 SEC.	
YELLOW CHANGE INT.	3.7 SEC.	3.0 SEC.	3.7 SEC.	3.7 SEC.
RED CLEARANCE	1.3 SEC.	1.9 SEC.	1.3 SEC.	1.3 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.

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

**SEPI**  
 ENGINEERING & CONSTRUCTION

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Prepared for the Offices of:

**NC 55 (North Alston Avenue) at Taylor Street**

Division 5 Durham County Durham

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

REVISIONS: INIT. DATE

SCALE: 1" = 40'

DocuSigned by: [Signature] 4/02/15  
 50781028F86C498 DATE  
 SIG. INVENTORY NO. 05-0228T1

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 28430  
 JETREY P. HOCHANADEL

3/20/2015 10:11:00 AM C:\Users\jlawson\Documents\2015\Projects\U-3308\Signal Design\Signal Design.dgn  
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