

8 Phase Fully Actuated (Durham Signal System)

NOTES

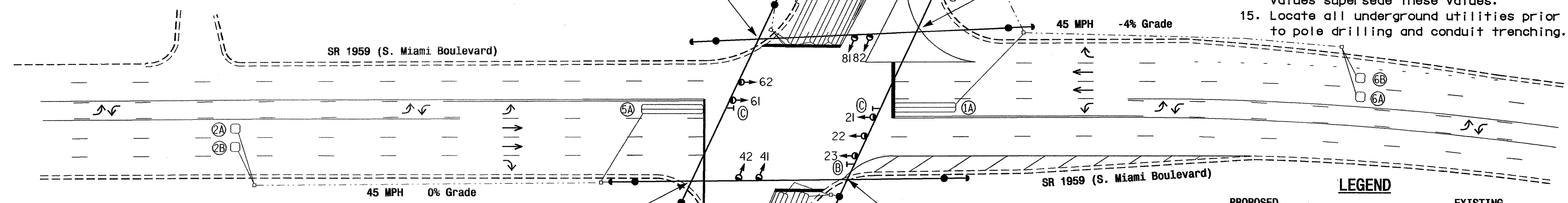
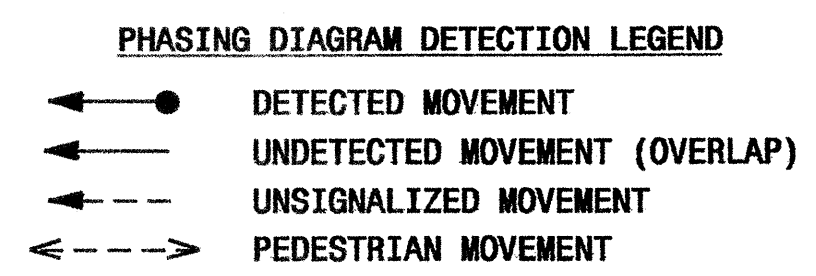
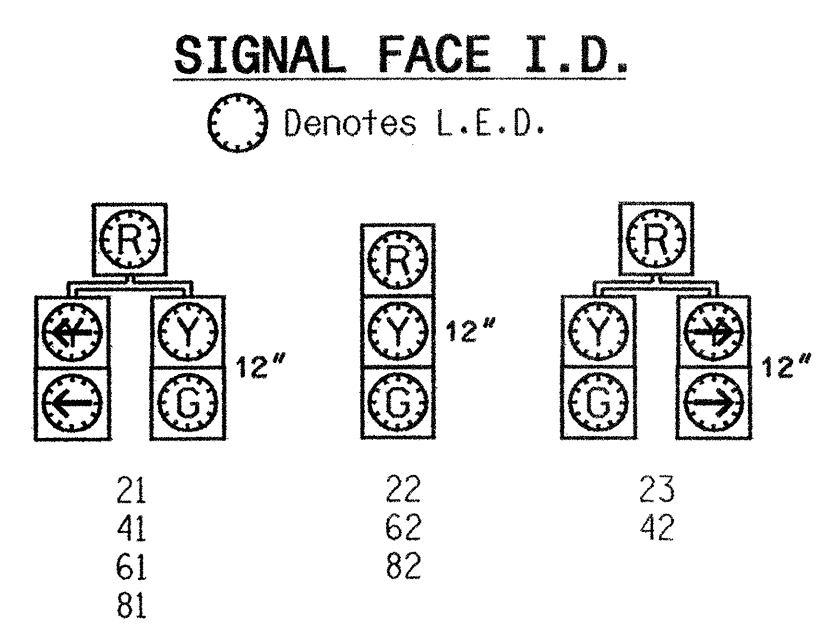
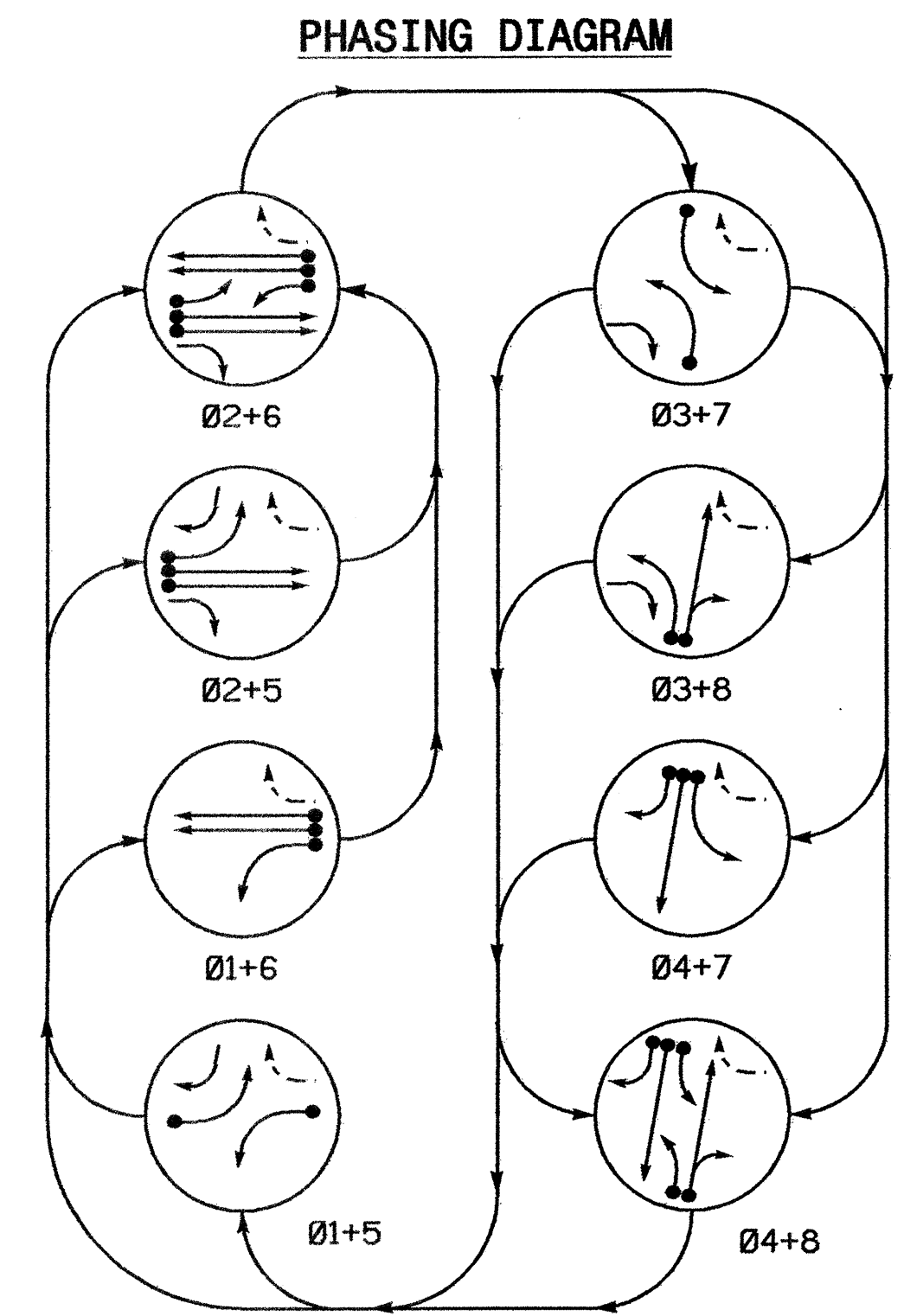
1. Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Program phase 1 as protected/permmissive.
4. Program phase 5 as protected/permmissive.
5. Program phase 3 as protected/permmissive.
6. Program phase 7 as protected/permmissive.
7. Remove existing signal head number 63.
8. Reposition existing signal heads numbered 21, 61, and 62.
9. Set all detector units to presence mode.
10. Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
11. Set phase bank 3 maximum limit to 250 seconds for phases used.
12. Existing "Left Turn Yield on Green" ball sign(s)-(R10-12) may be removed at the discretion of the Regional Traffic Engineer.
13. Pavement markings are existing.
14. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
15. Locate all underground utilities prior to pole drilling and conduit trenching.

LOOP & DETECTOR UNIT INSTALLATION CHART
170 CONTROLLER AND CABINET

LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	DETECTOR PROGRAMMING												
						NEMA PHASE	DELAY	CARRY (STRETCH)	FULL TIME DELAY	PEDESTRIAN CALL	ATTRIBUTES				SYSTEM LOOPS	STATUS		
											1	2	3	4			5	6
1A	6X40	2-4-2	0	X		1	15 SEC.	— SEC.						X	X			X
2A	6X6	5	300	X		6	3 SEC.	— SEC.	X				X	X	X		X	
2B	6X6	5	300	X		4	15 SEC.	— SEC.					X	X	X		X	
3A	6X40	2-4-2	0	X		3	15 SEC.	— SEC.					X	X	X		X	
4A	6X40	2-4-2	0	X		4	— SEC.	— SEC.					X	X	X		X	
4B	6X40	2-4-2	0	X		4	15 SEC.	— SEC.					X	X	X		X	
5A	6X40	2-4-2	0	X		5	15 SEC.	— SEC.					X	X	X		X	
6A	6X6	5	300	X		2	3 SEC.	— SEC.	X				X	X	X		X	
6B	6X6	5	300	X		6	— SEC.	— SEC.					X	X	X		X	
7A	6X40	2-4-2	0	X		7	15 SEC.	— SEC.					X	X	X		X	
8A	6X40	2-4-2	0	X		4	3 SEC.	— SEC.					X	X	X		X	

TABLE OF OPERATION

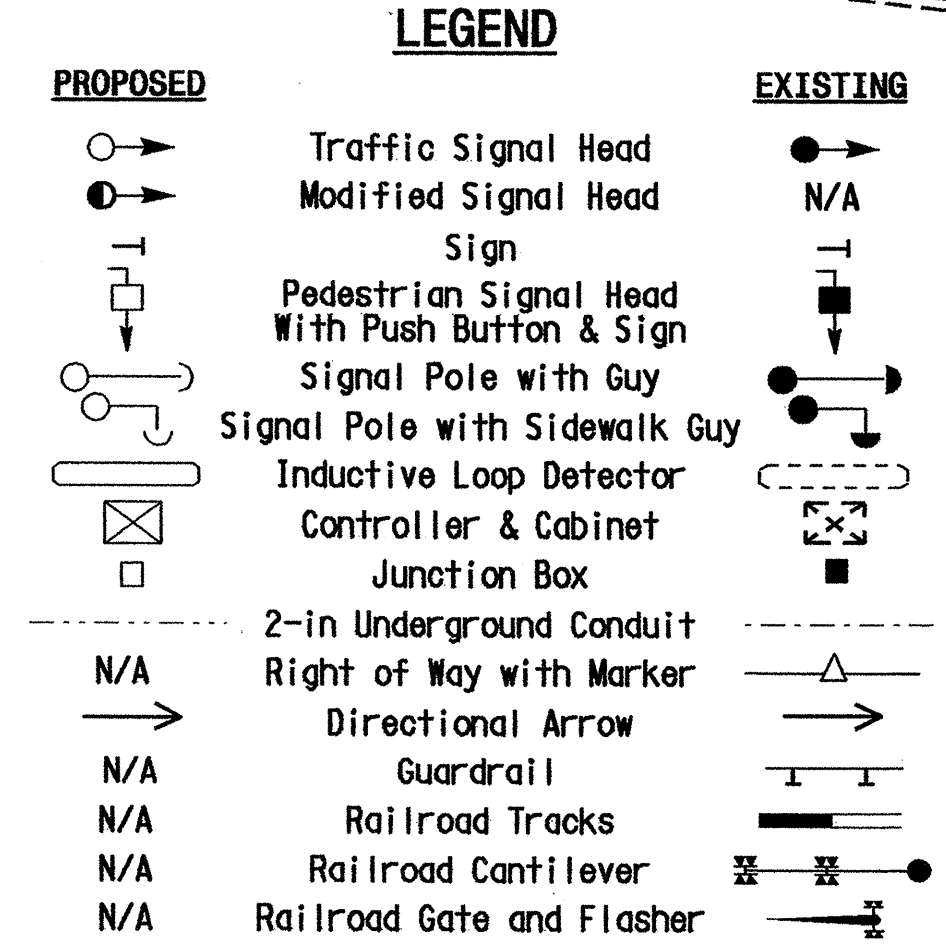
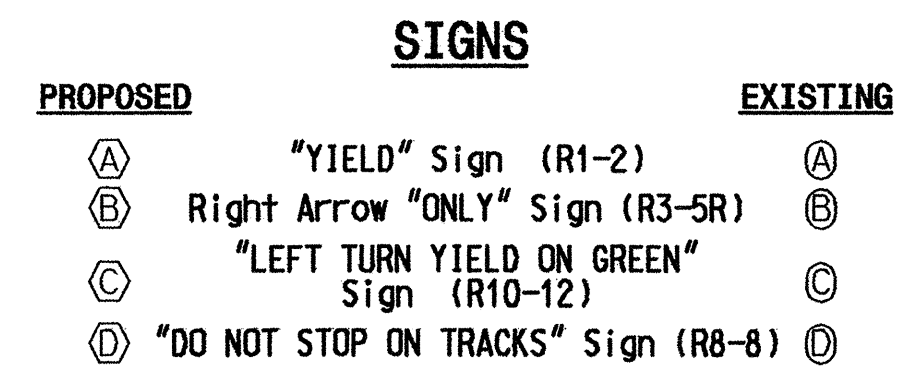
SIGNAL FACE	PHASE							
	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3+7	Ø3+8	Ø4+7	Ø4+8
21	R	R	G	G	R	R	R	Y
22	R	R	G	G	R	R	R	Y
23	R	R	G	G	R	R	R	Y
41	R	R	R	R	R	R	G	R
42	R	R	R	R	R	R	G	R
61	R	R	G	G	R	R	R	Y
62	R	R	G	G	R	R	R	Y
81	R	R	R	R	R	R	G	R
82	R	R	R	R	R	R	G	R



TIMING CHART
170 CONTROLLER

PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM INITIAL *	7 SEC.	12 SEC.	7 SEC.	7 SEC.	7 SEC.	12 SEC.	7 SEC.	7 SEC.
VEHICLE EXTENSION *	2.0 SEC.	6.0 SEC.	2.0 SEC.	2.0 SEC.	2.0 SEC.	6.0 SEC.	2.0 SEC.	2.0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.5 SEC.	4.0 SEC.	5.5 SEC.	4.0 SEC.	4.9 SEC.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	2.4 SEC.	1.9 SEC.	2.0 SEC.	1.4 SEC.	2.4 SEC.	1.8 SEC.	2.0 SEC.	2.7 SEC.
MAXIMUM LIMIT *	15 SEC.	90 SEC.	25 SEC.	30 SEC.	40 SEC.	90 SEC.	25 SEC.	30 SEC.
RECALL POSITION	NONE	VEH. RECALL	NONE	NONE	NONE	VEH. RECALL	NONE	NONE
VEHICLE CALL MEMORY	NONE	YELLOW LOCK	NONE	NONE	NONE	YELLOW LOCK	NONE	NONE
DOUBLE ENTRY	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
WALK *	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.
FLASHING DON'T WALK	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.
TYPE 3 LIMIT	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.
ALTERNATE EXTENSION	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.	— SEC.
ADD PER VEHICLE *	— SEC.	1.5 SEC.	— SEC.	— SEC.	— SEC.	1.5 SEC.	— SEC.	— SEC.
MAXIMUM INITIAL *	— SEC.	34 SEC.	— SEC.	— SEC.	— SEC.	34 SEC.	— SEC.	— SEC.
MAXIMUM GAP *	2.0 SEC.	7.0 SEC.	2.0 SEC.	2.0 SEC.	2.0 SEC.	7.0 SEC.	2.0 SEC.	2.0 SEC.
REDUCE 0.1 SEC EVERY *	— SEC.	1.5 SEC.	— SEC.	— SEC.	— SEC.	1.5 SEC.	— SEC.	— SEC.
MINIMUM GAP	2.0 SEC.	3.0 SEC.	2.0 SEC.	2.0 SEC.	2.0 SEC.	3.0 SEC.	2.0 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.



PLAN QUANTITIES

Pay Item	Feet
Signal Cable	0
Messenger Cable	0
Lead-in Cable	2000

Signal Upgrade

Prepared in the Office of:
Durham County Transportation Planning and Geomatics Section
122 N. McDowell St., Raleigh, NC 27603

SR 1959 (Miami Boulevard) at SR 1121 (Cornwallis Road) and IBM Lab Entrance

Division 5 Durham County Durham
 PLAN DATE: November 2004 REVIEWED BY:
 PREPARED BY: AB Hambricht REVIEWED BY:
 REVISIONS: INIT. DATE

SCALE: 1"=40'

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 026486
 ROBERT J. ZIEGLER
 SIGNATURE: [Signature] DATE: 3/2/05
 SIG. INVENTORY NO. 05-0704