

8 Phase Fully Actuated (Durham Signal System)

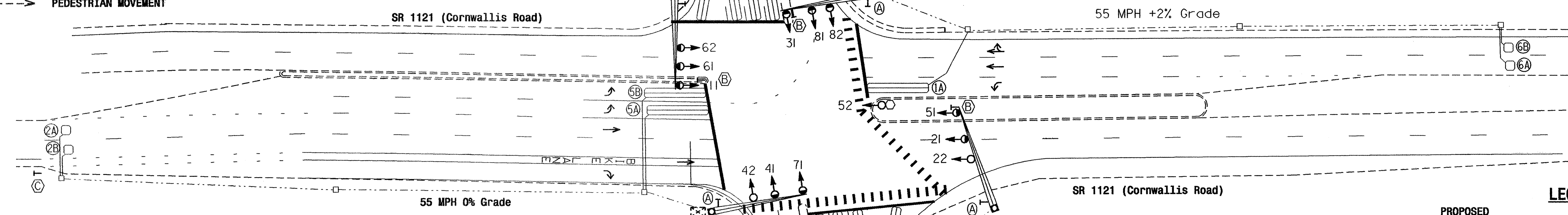
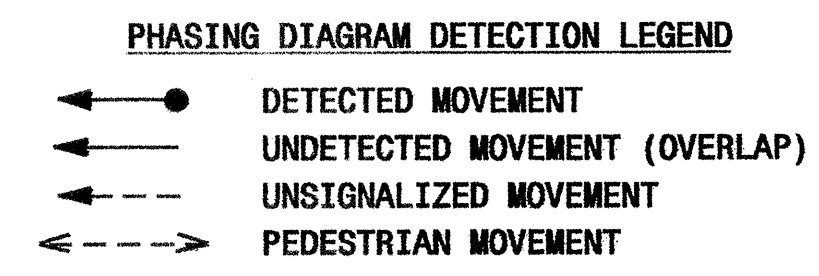
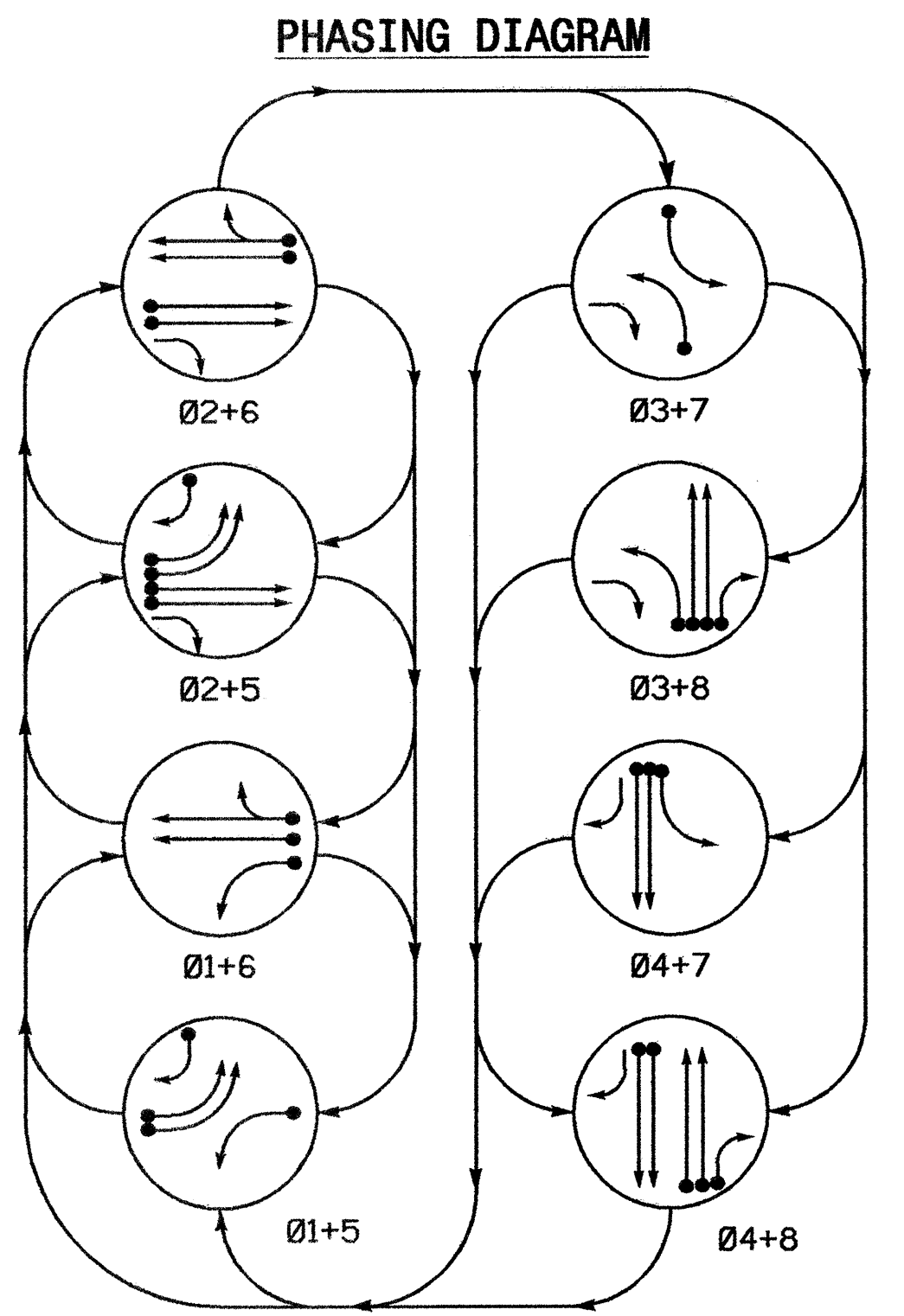
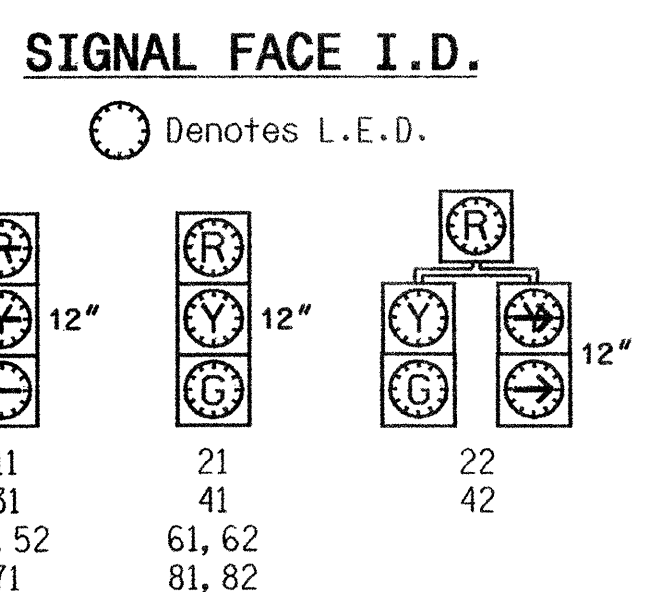
- NOTES**
- Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
  - Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
  - Phase 1 or phase 5 may be lagged.
  - Phase 3 or phase 7 may be lagged.
  - Reposition existing signal heads numbered 21, 41, 81, and 82.
  - Set all detector units to presence mode.
  - Set phase bank 3 maximum limit and max 2 to 250 seconds for all through phases used and to 150 seconds for all left turn phases used.
  - Pavement markings are existing unless otherwise noted.
  - Extend existing Eastbound and Southbound stopbars across new turn lanes.
  - Utilize existing conduit system under intersection when possible.
  - Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

**LOOP & DETECTOR UNIT INSTALLATION CHART**  
170 CONTROLLER AND CABINET

LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW/EXISTING	NEMA PHASE	DETECTOR PROGRAMMING												
						TIMING		ATTRIBUTES								STATUS		
						DELAY	CARRY (STREETS)	1	2	3	4	5	6	7	8	NEW	EXISTING	
1A	6X40	2-4-2	0	X	1	-	SEC.	-	SEC.	-	-	-	-	-	X	-	-	X
2A	6X6	6	420	X	2	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
2B	6X6	6	420	X	2	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
3A	6X40	2-4-2	0	X	3	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
4A, 4B	6X6	6	420	X	4	4.2	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
4C	6X40	2-4-2	0	X	4	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
4D	6X40	2-4-2	0	X	4	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
5A	6X40	2-4-2	0	X	5	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
5B	6X40	2-4-2	0	X	5	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
5C	6X40	2-4-2	0	X	5	15	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
6A	6X6	6	420	X	6	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
6B	6X6	6	420	X	6	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
7A	6X40	2-4-2	0	X	7	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
8A, 8B	6X6	6	420	X	8	4.2	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
8C	6X40	2-4-2	0	X	8	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
8D	6X40	2-4-2	0	X	8	-	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X
8E	6X40	2-4-2	0	X	8	15	SEC.	-	SEC.	-	-	-	X	X	-	X	-	X

**TABLE OF OPERATION**

SIGNAL FACE	PHASE							
	Ø 1+5	Ø 2+5	Ø 2+6	Ø 2+7	Ø 3+7	Ø 3+8	Ø 4+7	Ø 4+8
11	-	-	R	R	R	R	R	R
21	R	R	G	G	R	R	R	Y
22	R	R	G	G	R	R	R	Y
31	R	R	R	R	-	-	R	R
41	R	R	R	R	R	R	G	R
42	R	R	R	R	R	R	G	R
51, 52	-	-	R	R	R	R	R	R
61, 62	R	G	R	G	R	R	R	Y
71	R	R	R	R	-	-	R	R
81, 82	R	R	R	R	R	G	R	G



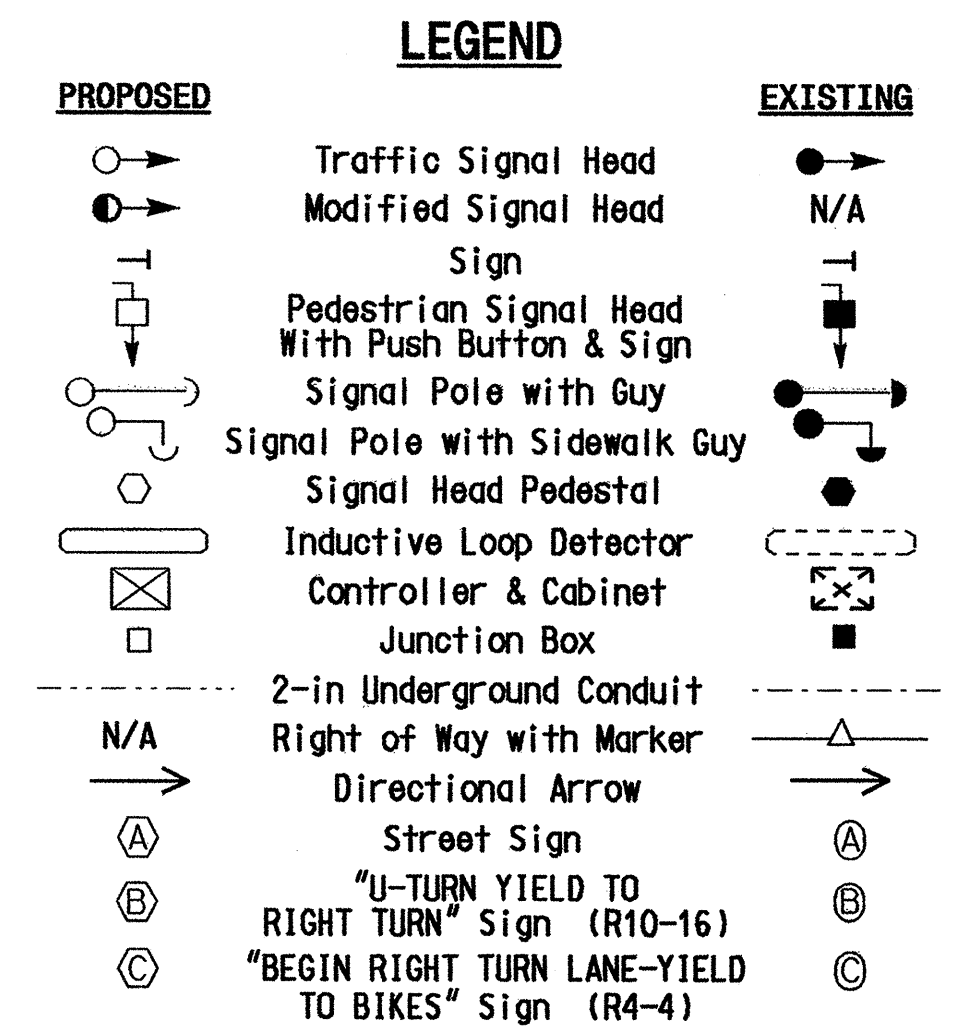
**TIMING CHART**  
170 CONTROLLER

PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM INITIAL *	7 SEC.	14 SEC.	7 SEC.	7 SEC.	7 SEC.	14 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.	3.5 SEC.	5.2 SEC.	4.0 SEC.	5.2 SEC.	3.5 SEC.	5.2 SEC.	4.0 SEC.	5.2 SEC.
RED CLEARANCE	2.9 SEC.	1.6 SEC.	3.5 SEC.	1.7 SEC.	3.2 SEC.	1.5 SEC.	2.9 SEC.	1.7 SEC.
MAXIMUM LIMIT *	30 SEC.	90 SEC.	20 SEC.	40 SEC.	30 SEC.	90 SEC.	20 SEC.	40 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	OFF	OFF	OFF	OFF	OFF
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.	46 SEC.	- SEC.	- SEC.	- SEC.	46 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.	3.4 SEC.	2.0 SEC.	2.0 SEC.	2.0 SEC.	3.4 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	350
Messenger Cable	0
Lead-in Cable	1900



**Signal Upgrade**

Prepared in the Office of:

**SR 1121 (Cornwallis Road) at SR 2028 (Alexander Drive)**

Division 5 Durham County RTP  
 PLAN DATE: Feb. 2005 REVIEWED BY: C. Krauss  
 PREPARED BY: AB Hambricht REVIEWED BY:  
 REVISIONS: INIT. DATE

SCALE: 1"=40'

SEAL  
  
 ROBERT J. ZIEHL  
 ENGINEER  
 026486  
 DATE: 3/3/05  
 SIG. INVENTORY NO. 05-0227