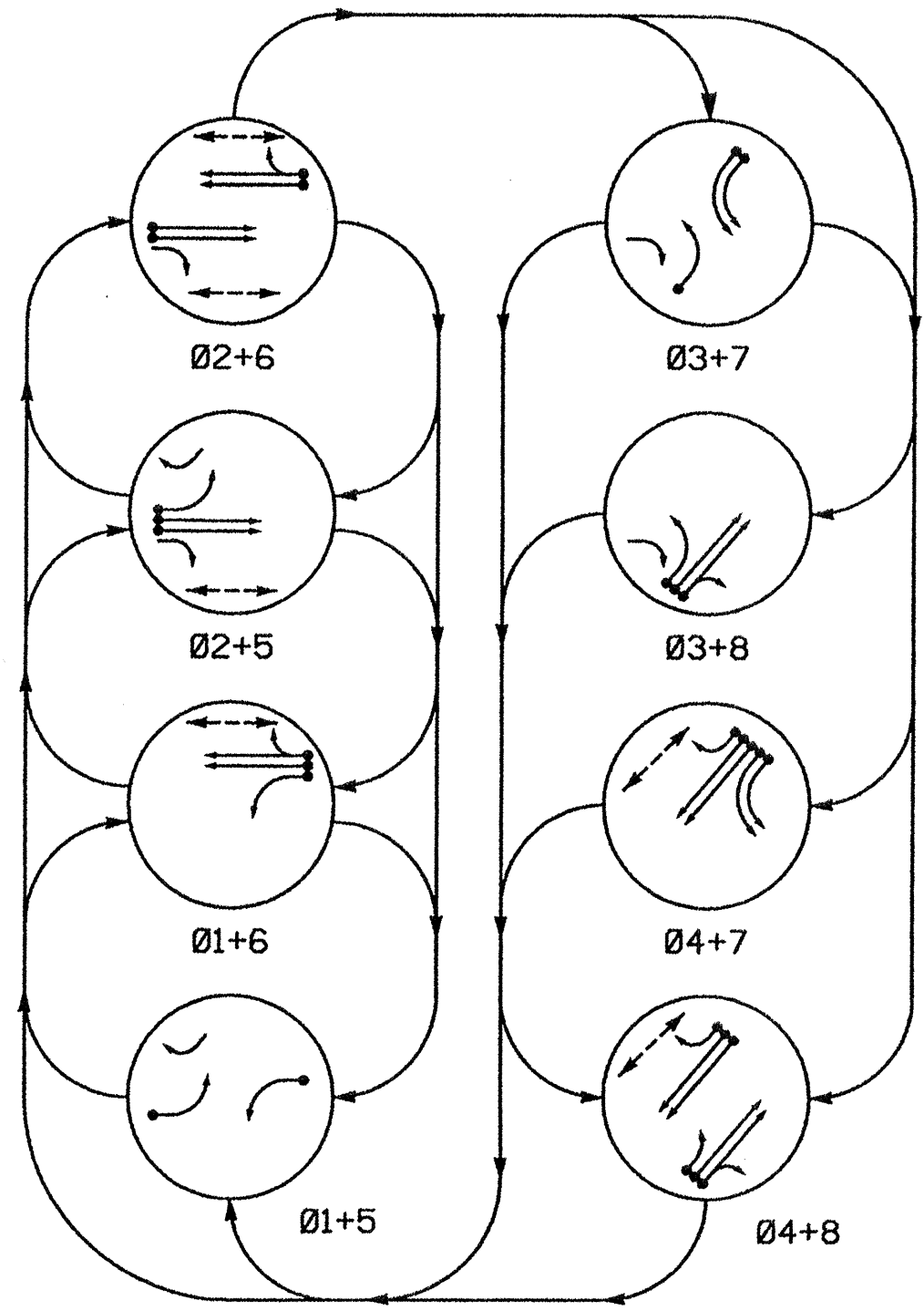


PHASING DIAGRAM



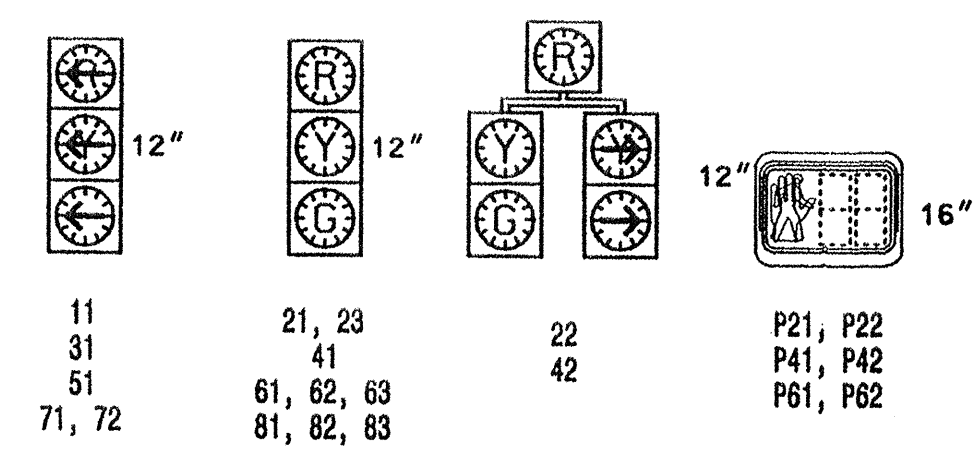
PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

SIGNAL FACE	PHASE							
	Ø1+5	Ø2+6	Ø3+7	Ø3+8	Ø4+7	Ø4+8	FLASH	F L A S H
11	→	→	→	→	→	→	→	→
21, 23	R	R	G	G	R	R	R	Y
22	R	R	G	G	R	R	R	Y
31	→	→	→	→	→	→	→	→
41	R	R	R	R	R	R	G	G
42	R	R	R	R	R	R	G	G
51	→	→	→	→	→	→	→	→
61, 62, 63	R	G	R	G	R	R	R	Y
71, 72	R	R	R	R	R	R	R	Y
81, 82, 83	R	R	R	R	R	G	R	G
P21, P22	DW	DW	W	DW	DW	DW	DRK	
P41, P42	DW	DW	DW	DW	DW	W	DRK	
P61, P62	DW	W	DW	W	DW	DW	DRK	

* SEE NOTE #2
SIGNAL FACE I.D.
 Denotes L.E.D.



LOOP & DETECTOR UNIT INSTALLATION CHART
 170 CONTROLLER AND CABINET

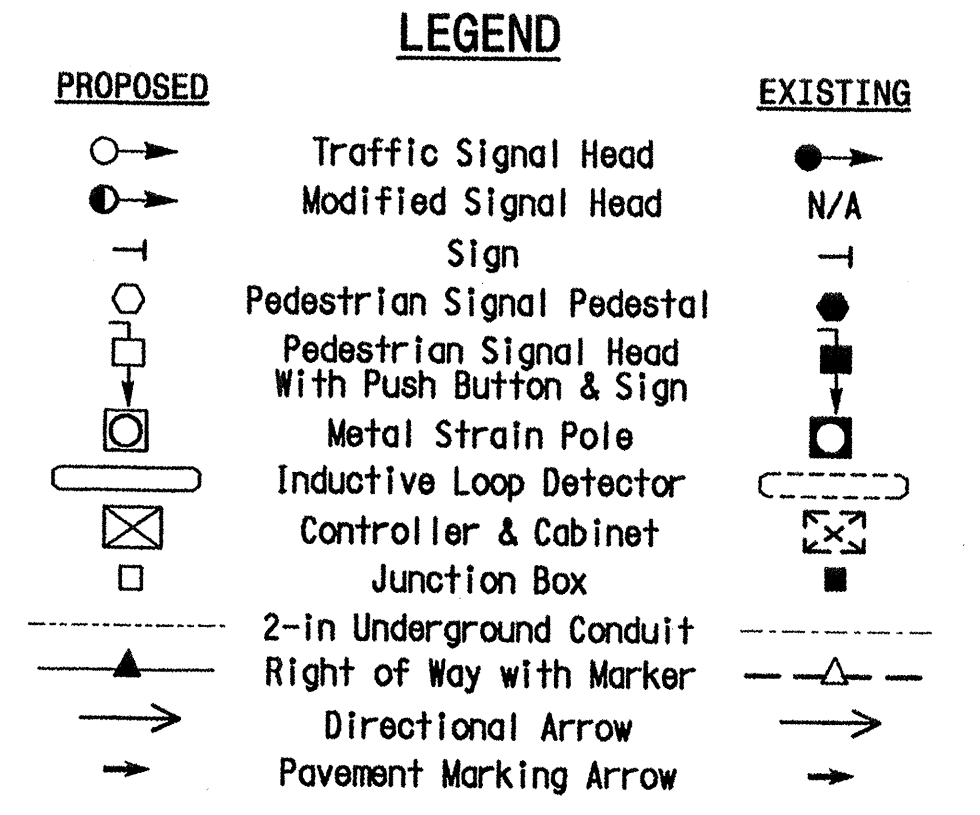
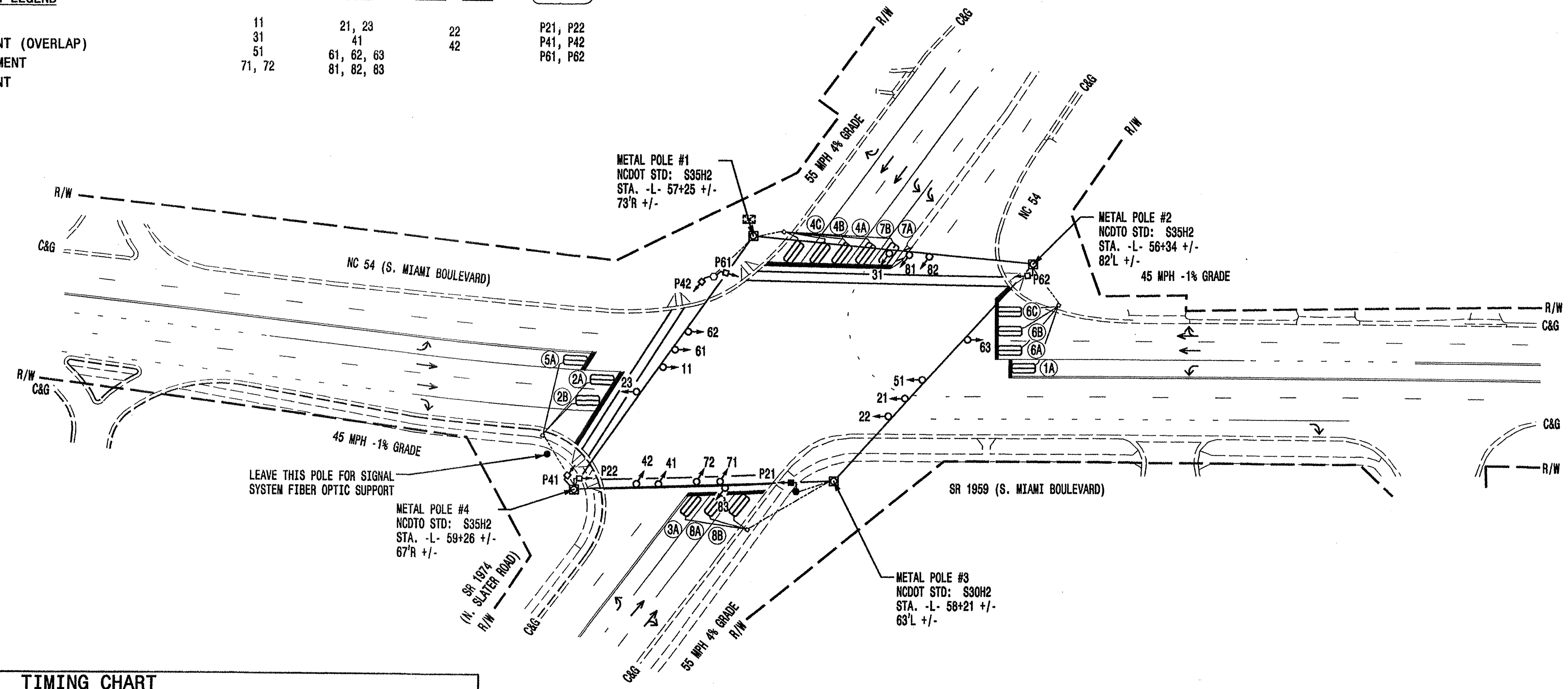
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	NEMA PHASE	TIMING		DETECTOR PROGRAMMING								STATUS		
							DELAY	CARRY (STRETCH)	ATTRIBUTES								NEW	EXISTING	
									1	2	3	4	5	6	7	8			
1A	6X15	2-4-2	0	X	-	1	3** SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
2A	6X15	2-4-2	0	X	-	2	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
2B	6X15	2-4-2	0	X	-	2	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
3A	6X15	2-4-2	0	X	-	3	3** SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
4A	6X15	2-4-2	0	X	-	4	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
4B	6X15	2-4-2	0	X	-	4	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
4C	6X15	2-4-2	0	X	-	4	15** SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
5A	6X15	2-4-2	0	X	-	5	3** SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
6A	6X15	2-4-2	0	X	-	6	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
6B	6X15	2-4-2	0	X	-	6	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
6C	6X15	2-4-2	0	X	-	6	15** SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
7A, 7B	6X15	2-4-2	0	X	-	7	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
8A	6X15	2-4-2	0	X	-	8	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
8B	6X15	2-4-2	0	X	-	8	10** SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
P21, P22	N/A	N/A	N/A	X	-	-	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
P41, P42	N/A	N/A	N/A	X	-	-	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X
P61, P62	N/A	N/A	N/A	X	-	-	- SEC.	- SEC.	-	-	-	-	-	X	-	-	-	-	X

**PROGRAM DELAY IN CONTROLLER, NOT IN DETECTOR.

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, and all applicable sections of the latest version of the Project Special Provisions.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Install louvered backplates for all signal heads.
- Program all timing information into phase banks 1, 2 and 3 unless otherwise noted.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- During coordination, phase 1 or phase 5 may be lagged.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Set all detector units to presence mode.
- Set Phase Bank 3 Maximum Limit to 250 seconds for phases used.
- Program signal for SCATS traffic adaptive operation.



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	1.0 SEC.	1.0 SEC.	1.0 SEC.	1.0 SEC.	1.0 SEC.	1.0 SEC.	1.0 SEC.	1.0 SEC.
YELLOW CHANGE INT.	5.5 SEC.	4.7 SEC.	4.0 SEC.	5.1 SEC.	5.5 SEC.	4.7 SEC.	4.0 SEC.	5.1 SEC.
RED CLEARANCE	3.0 SEC.	3.0 SEC.	3.0 SEC.	2.5 SEC.	3.0 SEC.	3.0 SEC.	3.0 SEC.	2.5 SEC.
MAXIMUM LIMIT	30 SEC.	90 SEC.	30 SEC.	40 SEC.	30 SEC.	90 SEC.	30 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	ON	OFF	OFF	OFF	ON
WALK	- SEC.	7 SEC.	- SEC.	7 SEC.	- SEC.	7 SEC.	- SEC.	- SEC.
FLASHING DON'T WALK	- SEC.	25 SEC.	- SEC.	24 SEC.	- SEC.	38 SEC.	- SEC.	- SEC.

SIGNAL UPGRADE - FINAL DESIGN

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 877-2000

NC 54/SR 1959 (S. MIAMI BLVD.)
 AT
 NC 54/SR 1974 (N. SLATER ROAD)

DIVISION 5 DURHAM COUNTY DURHAM

PLAN DATE: JUNE 2004 REVIEWED BY:

PREPARED BY: SP PENNINGTON REVIEWED BY: DE MARCEAU

REVISIONS: _____ INIT. DATE

SEAL

DATE: 7/13/04

SIGNATURE: _____

SIG. INVENTORY NO. 05-0432

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