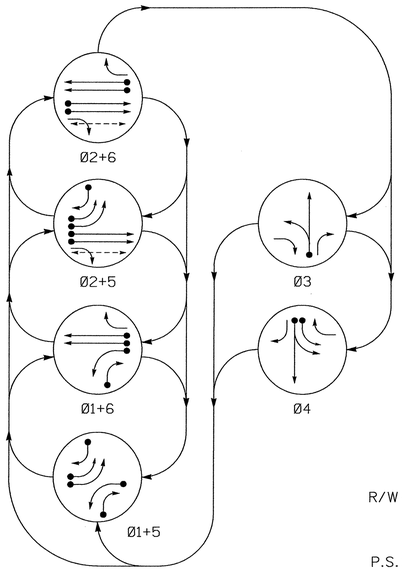
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	U-2734	Sig. 27

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

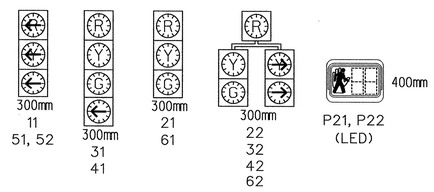
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3	Ø4	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
21	R	R	G	G	R	R	Y
22	R	R	G	G	R→	R	Y
31	R	R	R	R	G←	R	R
32	R→	R→	R	R	G	R	R
41	R	R	R	R	G←	R	
42	R→	R	R→	R	R	G	R
51, 52	←	~~R~~	←	~~R~~	~~R~~	~~R~~	~~R~~
61	R	G	R	G	R	R	Y
62	R	G	R	G	R	R→	Y
P21, P22	DW	DW	W	W	DW	DW	DRK

SIGNAL FACE I.D.

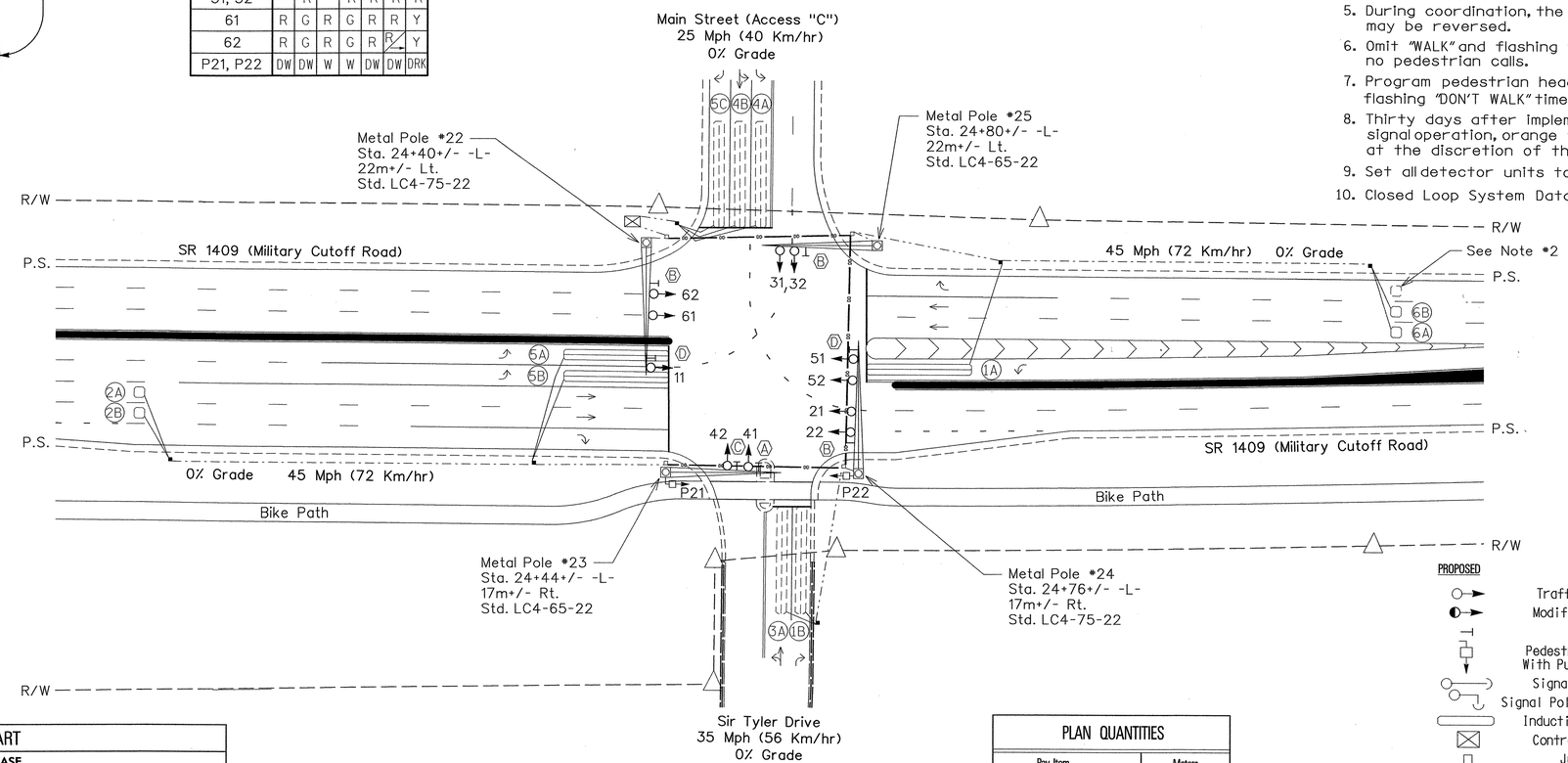
Denotes L.E.D.



6 Phase
(Fully Actuated)
(Military Cutoff Road Closed Loop System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
2. Disconnect and abandon existing loop.
3. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
4. During coordination, phase 1 and/or phase 5 may be lagged.
5. During coordination, the order of phase 3 and 4 may be reversed.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to count down the flashing "DON'T WALK" time only.
8. Thirty days after implementation of the revised signal operation, orange flags may be removed at the discretion of the Regional Traffic Engineer.
9. Set all detector units to presence mode.
10. Closed Loop System Data Controller Asset: #0951.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	50mm Underground Conduit	
N/A	Right of Way with Marker	
	Directional Arrow	
	Pavement Marking Arrow	
	Metal Pole with Mastarm	
DD	Directional Drill	N/A
Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
Ⓑ	Right Arrow "ONLY" Sign (R3-5R)	Ⓑ
Ⓒ	Combined Through and Left Arrow Sign (R3-6L) w/ Orange Flags	Ⓒ
Ⓓ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓓ

2070L TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green 1 *	7	12	7	7	7	12
Extension 1 *	1.0	6.0	1.0	1.0	1.0	6.0
Max Green 1 *	15	100	25	25	15	100
Yellow Clearance	4.0	4.7	4.0	4.0	4.0	4.7
Red Clearance	2.5	1.5	3.0	3.0	2.5	1.5
Walk 1 *	-	4	-	-	-	-
Don't Walk 1	-	10	-	-	-	-
Seconds Per Actuation *	-	1.5	-	-	-	1.5
Max Variable Initial *	-	34	-	-	-	34
Time Before Reduction *	-	15	-	-	-	15
Time To Reduce *	-	30	-	-	-	30
Minimum Gap	-	3.0	-	-	-	3.0
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* 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.

2070L LOOP & DETECTOR INSTALLATION

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (M)	TURNS	DISTANCE FROM STOPBAR (M)	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	SYSTEM LOOP	STRETCH TIME	DELAY TIME	NEW CARD
1A	1.8X18	2-4-2	0	Y	1	Y	Y	–	–	—	—	Y
1B	1.8X18	2-4-2	0	–	1	Y	Y	–	–	—	10	Y
2A	1.8X1.8	5	90	Y	2	Y	Y	–	–	—	—	Y
2B	1.8X1.8	5	90	Y	2	Y	Y	–	–	—	—	Y
3A	1.8X18	2-4-2	0	–	3	Y	Y	–	–	—	—	Y
4A	1.8X18	2-4-2	0	–	4	Y	Y	–	–	—	3	Y
4B	1.8X18	2-4-2	0	–	4	Y	Y	–	–	—	—	Y
5A	1.8X18	2-4-2	0	Y	5	Y	Y	–	–	—	—	Y
5B	1.8X18	2-4-2	0	Y	5	Y	Y	–	–	—	—	Y
5C	1.8X18	2-4-2	0	–	5	Y	Y	–	–	—	15	Y
6A	1.8X1.8	5	90	Y	6	Y	Y	–	–	—	—	Y
6B	1.8X1.8	5	90	Y	6	Y	Y	–	–	—	—	Y

PLAN QUANTITIES

Pay Item	Meters
Signal Cable	460
Messenger Cable	0
Lead-in Cable	1060

Signal Upgrade Final Design

SEPI ENGINEERING GROUP
2300 Rexwoods Drive
Suite 370
Raleigh, NC 27607
Tel:919-789-9977 Fax:789-9591

Prepared for:
Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals and Geometrics Section
122 N. McDowell St., Raleigh, NC 27603

SCALE 5 0 10 1:500

SR 1409 (Military Cutoff Road)
at
Sir Tyler Drive and Main Street (Access "C")

Division 3	New Hanover County		Wilmington
PLAN DATE:	Sept 2003	REVIEWED BY:	L. M. Eddins
PREPARED BY:	H. M. Surti	REVIEWED BY:	S. S. Asefnia

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 20104 ENGINEER SIDDHARTH S. ASEFNIA
1/7/04
SIGNATURE DATE
SIG. INVENTORY NO. 03-0951

$$$$$$CSTIME$$$$$
$$$$$$