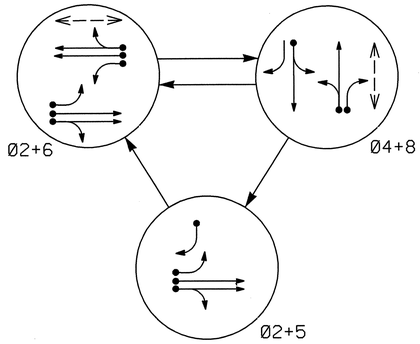
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-2813C	SIG.38

PHASING DIAGRAM



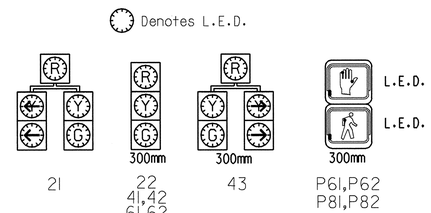
PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2+5	PHASE Ø2+6	PHASE Ø4+8	PHASE FLASH
21	G	G	R	Y
22	G	G	R	Y
41,42	R	R	G	R
43	R	R	G	R
61,62	R	G	R	Y
81,82,83	R	R	G	R
P61,P62	DW	W	DW	DRK
P81,P82	DW	DW	W	DRK

SIGNAL FACE I.D.



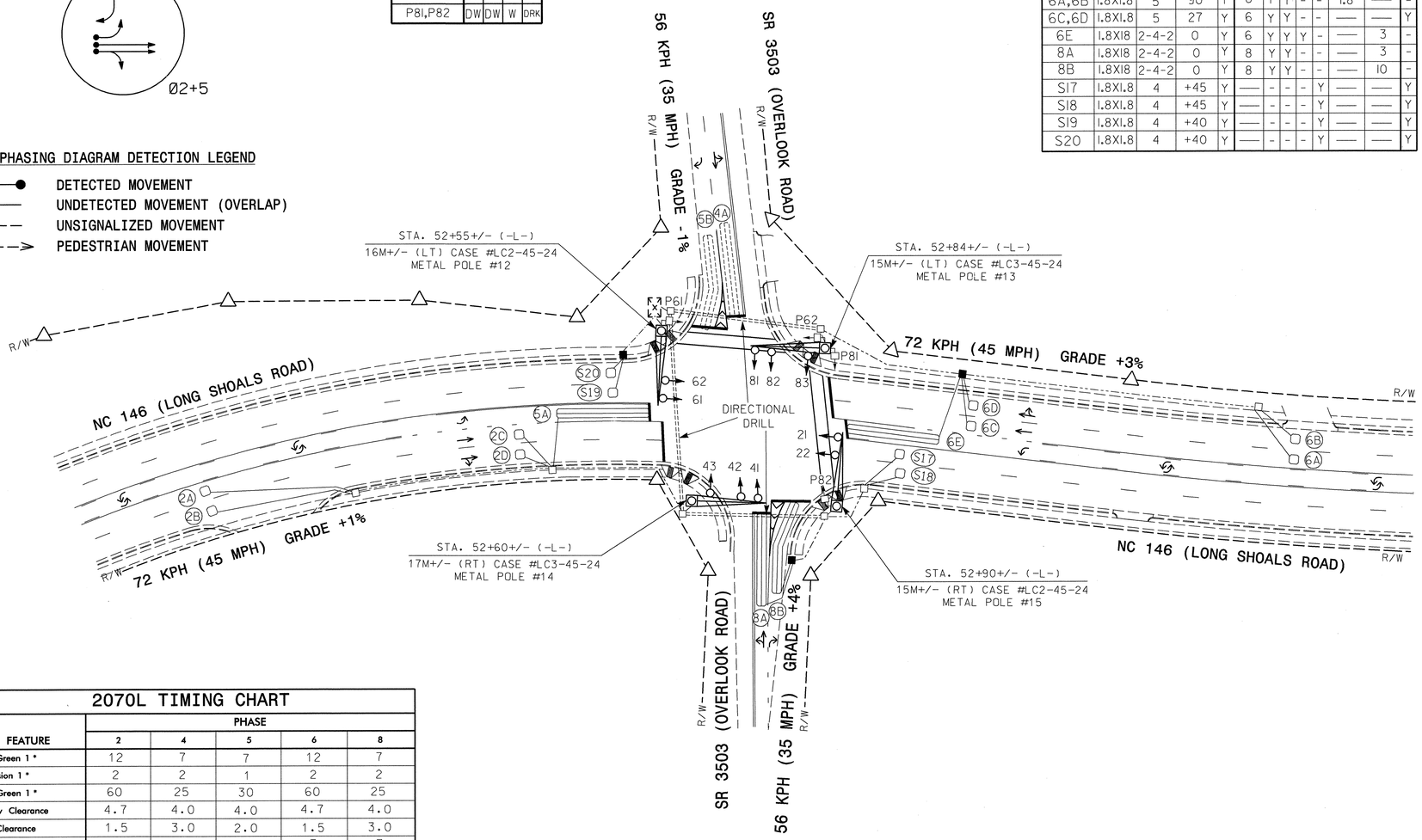
2070L LOOP & DETECTOR INSTALLATION

INDUCTIVE LOOPS: LOOP	SIZE (M)	TURNS	DISTANCE FROM STOPBAR (M)	NEW LOOP	DETECTOR PROGRAMMING: PHASE	CALLING	EXTENSION	FULL TIME DELAY	SYSTEM LOOP	STRETCH TIME	DELAY TIME	NEW CARD
2A,2B	1.8X1.8	5	90	Y	2	Y	Y	-	-	1.8	——	-
2C,2D	1.8X1.8	5	27	Y	2	Y	Y	-	-	——	——	Y
4A	1.8X18	2-4-2	0	-	4	Y	Y	-	-	——	3	-
5A	1.8X18	2-4-2	0	Y	2	Y	Y	Y	-	——	3	-
					5	Y	Y	-	-	——	15	-
5B	1.8X18	2-4-2	0	-	5	Y	Y	-	-	——	15	-
6A,6B	1.8X1.8	5	90	Y	6	Y	Y	-	-	1.8	——	-
6C,6D	1.8X1.8	5	27	Y	6	Y	Y	-	-	——	——	Y
6E	1.8X18	2-4-2	0	Y	6	Y	Y	Y	-	——	3	-
8A	1.8X18	2-4-2	0	Y	8	Y	Y	-	-	——	3	-
8B	1.8X18	2-4-2	0	Y	8	Y	Y	-	-	——	10	-
SI7	1.8X1.8	4	+45	Y	——	-	-	-	Y	——	——	Y
SI8	1.8X1.8	4	+45	Y	——	-	-	-	Y	——	——	Y
SI9	1.8X1.8	4	+40	Y	——	-	-	-	Y	——	——	Y
S20	1.8X1.8	4	+40	Y	——	-	-	-	Y	——	——	Y

3 Phase Fully Actuated
(Closed Loop Signal System)

NOTES

1. REFER TO "ROADWAY STANDARD DRAWINGS NCDOT", DATED JANUARY 2002 AND "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2002.
2. MAXIMUM TIMES SHOWN IN TIMING CHART ARE FOR FREE-RUN OPERATIONS ONLY. COORDINATED SIGNAL SYSTEM TIMING VALUES SHALL SUPERSEDE THESE VALUES.
3. OMIT PHASE 5 DURING PHASE 6 ON.
4. PROGRAM CONTROLLER TO CLEAR FROM PHASE 2+6 TO PHASE 2+5 BY PROGRESSING THROUGH PHASE 4+8 (SEE ELECTRICAL DETAILS)
5. OMIT "WALK" AND FLASHING "DON'T WALK" WITH NO PEDESTRIAN CALLS.
6. SET ALL DETECTOR UNITS TO PRESENCE MODE.
7. CLOSED LOOP SYSTEM DATA: INTERSECTION CONTROLLER ASSET # 0444



PLAN QUANTITIES

Pay Item	Meters
Signal Cable	275
Messenger Cable	——
Lead-in Cable	860

2070L TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 5	PHASE 6	PHASE 8
Min Green 1 *	12	7	7	12	7
Extension 1 *	2	2	1	2	2
Max Green 1 *	60	25	30	60	25
Yellow Clearance	4.7	4.0	4.0	4.7	4.0
Red Clearance	1.5	3.0	2.0	1.5	3.0
Walk 1 *	-	-	-	7	7
Don't Walk 1	-	-	-	16	15
Seconds Per Actuation *	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Recall Mode	MIN RECALL	-	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	-	YELLOW	-
Dual Entry	-	ON	-	-	ON
Simultaneous Gap	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.

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	
	Directional Drill 2-50 mm Polyethylene Conduit	
	Wheelchair Ramp	N/A
	Metal Pole with Mastarm	

SIGNAL UPGRADE - FINAL

PLANS PREPARED BY :
RUMMEL KLEPPER & KAHL, LLP
consulting engineers
5800 FARINGDON PLACE SUITE 105
RALEIGH, NORTH CAROLINA 27609-3960
FOR
DIVISION OF HIGHWAYS

Prepared for the Offices of:
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

NC 146 (LONG SHOALS ROAD)
AT
SR 3503 (OVERLOOK ROAD)

DIVISION 13 BUNCOMBE COUNTY ASHEVILLE

PLAN DATE: 02-07-04	REVIEWED BY: D. MORTON
PREPARED BY: J. COLE	RK&K PROJECT NO. 302-079-SIG4

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19798 ENGINEER DONALD W. MORTON
SIGNATURE 2-26-04 DATE

SIG. INVENTORY NO. 13-0444