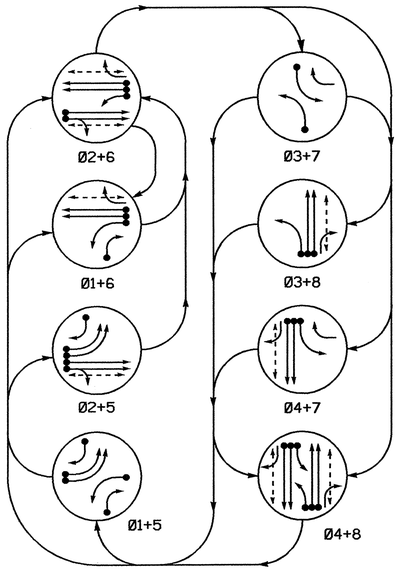
PROJECT REFERENCE NO.	SHEET NO.
U-0620	SIG.26

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATIONS

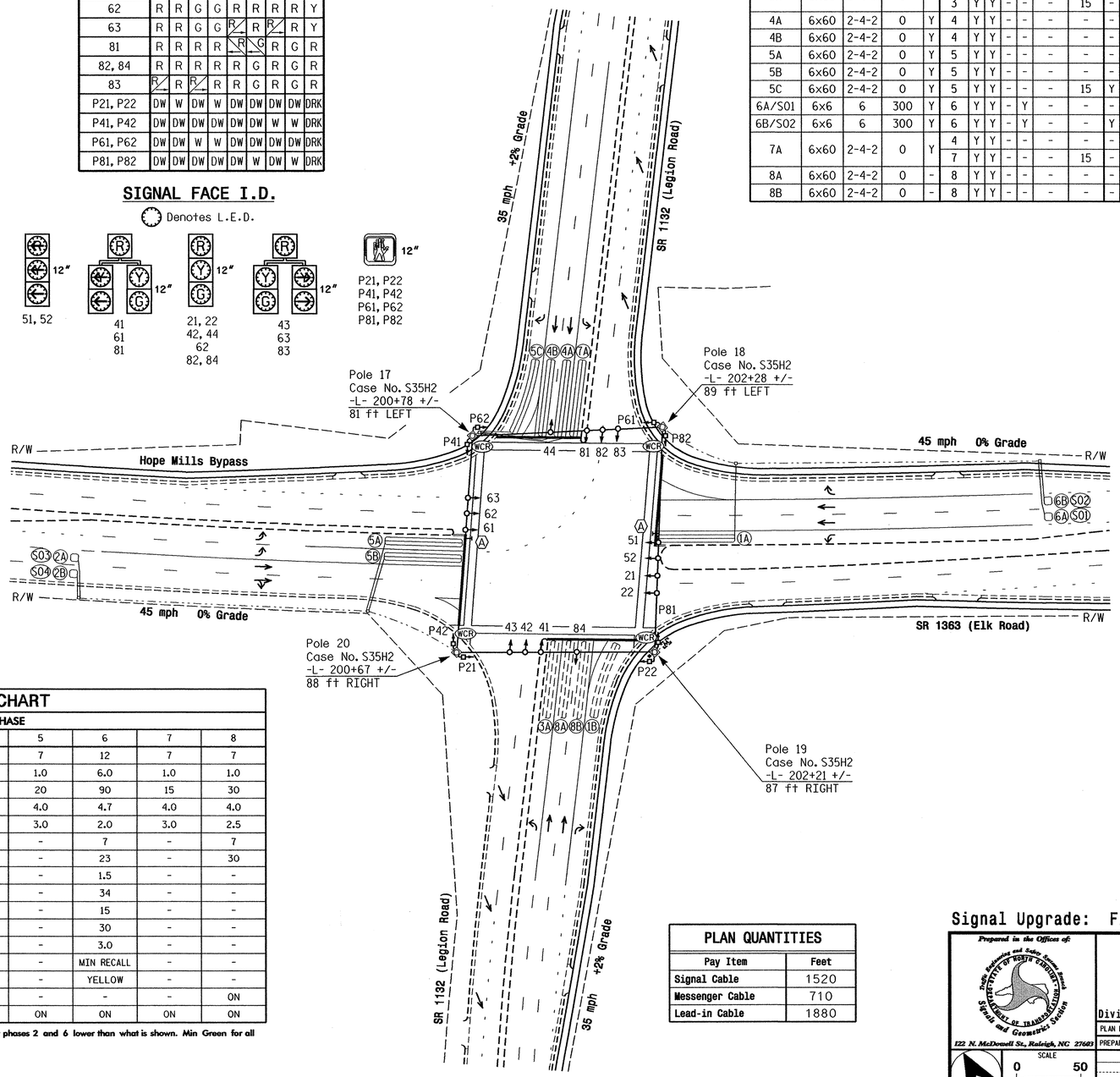
SIGNAL FACE	PHASE 01+5	02+5	01+6	02+6	03+7	03+8	04+7	04+8	FLASH
21, 22	R	G	R	G	R	R	R	R	Y
41	R	R	R	R	R/R	R	G	G	R
42, 44	R	R	R	R	R	R	G	G	R
43	R/R	R/R	R	R	R	R	G	G	R
51, 52	←	←	R	R	R	R	R	R	R
61	R/R	R	G	G	R	R	R	R	Y
62	R	R	G	G	R	R	R	R	Y
63	R	R	G	G	R/R	R	R/R	R	Y
81	R	R	R	R	R/R	R/G	R	G	R
82, 84	R	R	R	R	R	G	R	G	R
83	R/R	R	R/R	R	R	G	R	G	R
P21, P22	DW	W	DW	W	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	DW	DW	DW	W	W	DRK
P61, P62	DW	DW	W	W	DW	DW	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DRK

SIGNAL FACE I.D.

Denotes L.E.D.

2070L LOOP & DETECTOR INSTALLATION

INDUCTIVE LOOPS: LOOP	SIZE (FT)	TURNS	DISTANCE FROM STOPBAR (FT)	NEW LOOP	DETECTOR PROGRAMMING: PHASE	CALLING	EXTENSION	FULL TIME DELAY	SYSTEM LOOP	STRETCH TIME	DELAY TIME	NEW CARD
1A	6x60	2-4-2	0	Y	6	Y	Y	Y	-	-	3	-
					1	Y	Y	-	-	-	15	-
1B	6x60	2-4-2	0	-	1	Y	Y	-	-	-	15	-
2A/S03	6x6	6	300	Y	2	Y	Y	-	Y	-	-	-
2B/S04	6x6	6	300	Y	2	Y	Y	-	Y	-	-	Y
3A	6x60	2-4-2	0	-	8	Y	Y	-	-	-	-	-
					3	Y	Y	-	-	-	15	-
4A	6x60	2-4-2	0	Y	4	Y	Y	-	-	-	-	-
4B	6x60	2-4-2	0	Y	4	Y	Y	-	-	-	-	-
5A	6x60	2-4-2	0	Y	5	Y	Y	-	-	-	-	-
5B	6x60	2-4-2	0	Y	5	Y	Y	-	-	-	-	-
5C	6x60	2-4-2	0	Y	5	Y	Y	-	-	-	15	Y
6A/S01	6x6	6	300	Y	6	Y	Y	-	Y	-	-	-
6B/S02	6x6	6	300	Y	6	Y	Y	-	Y	-	-	Y
7A	6x60	2-4-2	0	Y	4	Y	Y	-	-	-	-	-
					7	Y	Y	-	-	-	15	-
8A	6x60	2-4-2	0	-	8	Y	Y	-	-	-	-	-
8B	6x60	2-4-2	0	-	8	Y	Y	-	-	-	-	-



2070L TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	1.0	6.0	1.0	1.0	1.0	6.0	1.0	1.0
Max Green 1 *	20	90	15	30	20	90	15	30
Yellow Clearance	4.0	4.7	4.0	4.0	4.0	4.7	4.0	4.0
Red Clearance	2.5	2.0	2.5	2.5	3.0	2.0	3.0	2.5
Walk 1 *	-	7	-	7	-	7	-	7
Don't Walk 1	-	28	-	28	-	23	-	30
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	-	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	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.

PLAN QUANTITIES

Pay Item	Feet
Signal Cable	1520
Messenger Cable	710
Lead-in Cable	1880

8 Phase
Fully Actuated
(Hope Mills 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. Omit phase 3 during phase 4 on.
3. Omit phase 5 during phase 6 on.
4. Omit phase 7 during phase 8 on.
5. Program controller to clear from phase 2+6 to phase 5 by progressing through phase 4+8 (see Electrical Details).
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Set all detector units to presence mode.
9. Closed loop system data:
   Controller Asset #0455
   Master Asset #10604.

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	▭
M	Master Controller & Cabinet	M
□	Junction Box	■
·-·-·	2-in Underground Conduit	·-·-·
N/A	Right of Way	
→	Directional Arrow	→
→	Pavement Marking Arrow	→
N/A	Wheelchair Ramp	WCR
◎	Metal Strain Pole	◎
A	U-Turn "MUST YIELD" Sign (R3-27)	A

Signal Upgrade: Final Design

Prepared in the Offices of:
Dan Andrews and Sidney Summerlin
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Signals and Geometrics Section
122 N. McDowell St., Raleigh, NC 27603

Hope Mills Bypass/ SR 1363 (Elk Road) at SR 1132 (Legion Road)

Division 6 | Cumberland County | Hope Mills

PLAN DATE: May 2003 | REVIEWED BY: L.A. Elliott
PREPARED BY: P.J. Porter | REVIEWED BY: STF/JPG

SCALE: 0 50, 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 24393 ENGINEER TIMOTHY J. WILLIAMS

SIGNATURE | DATE 1/22/03

SIG. INVENTORY NO. 06-0455

21-OCT-2003 17:34
N:\Projects-Unit\Workgroups\TIP Projects\U-0620\060455_2003xxx.sig
pjporter