

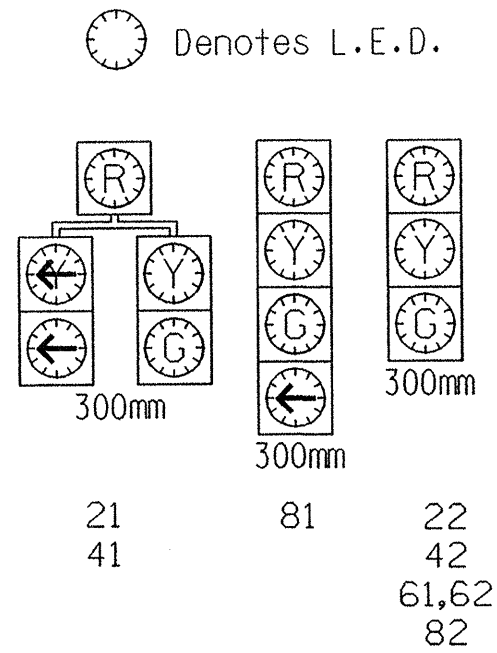
**4 PHASE SEMI ACTUATED RAILROAD PREEMPTION ISOLATED**

**NOTES**

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
2. Omit Phase 5 during Phase 6 on.
3. Omit Phase 7 during Phase 8 on.
4. Program controller to clear from phase 2+6 to phase 2+5 by progressing through phase 4+8 (see Electrical Details).
5. Set all detector units to presence mode.
6. Ensure flashing operation does not alter operation of blankout signs.
7. Reposition existing signal heads numbered #21, 22, 61, 62, 81 and 82, and signs B and C.
8. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.

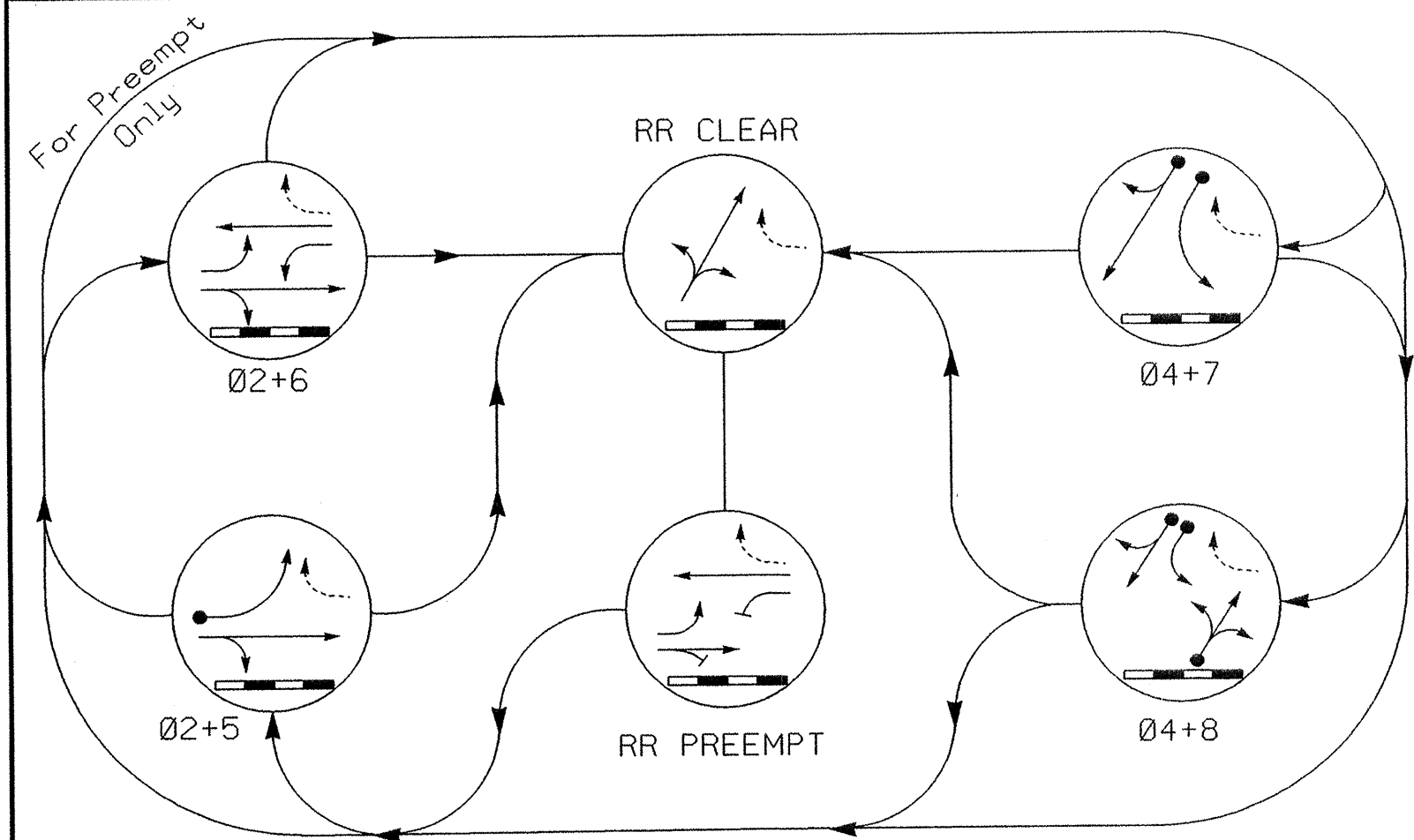
PLAN QUANTITIES	
Pay Item	Meters
Signal Cable	0
Messenger Cable	0
Loop Lead-in Cable	360

**SIGNAL FACE I.D.**



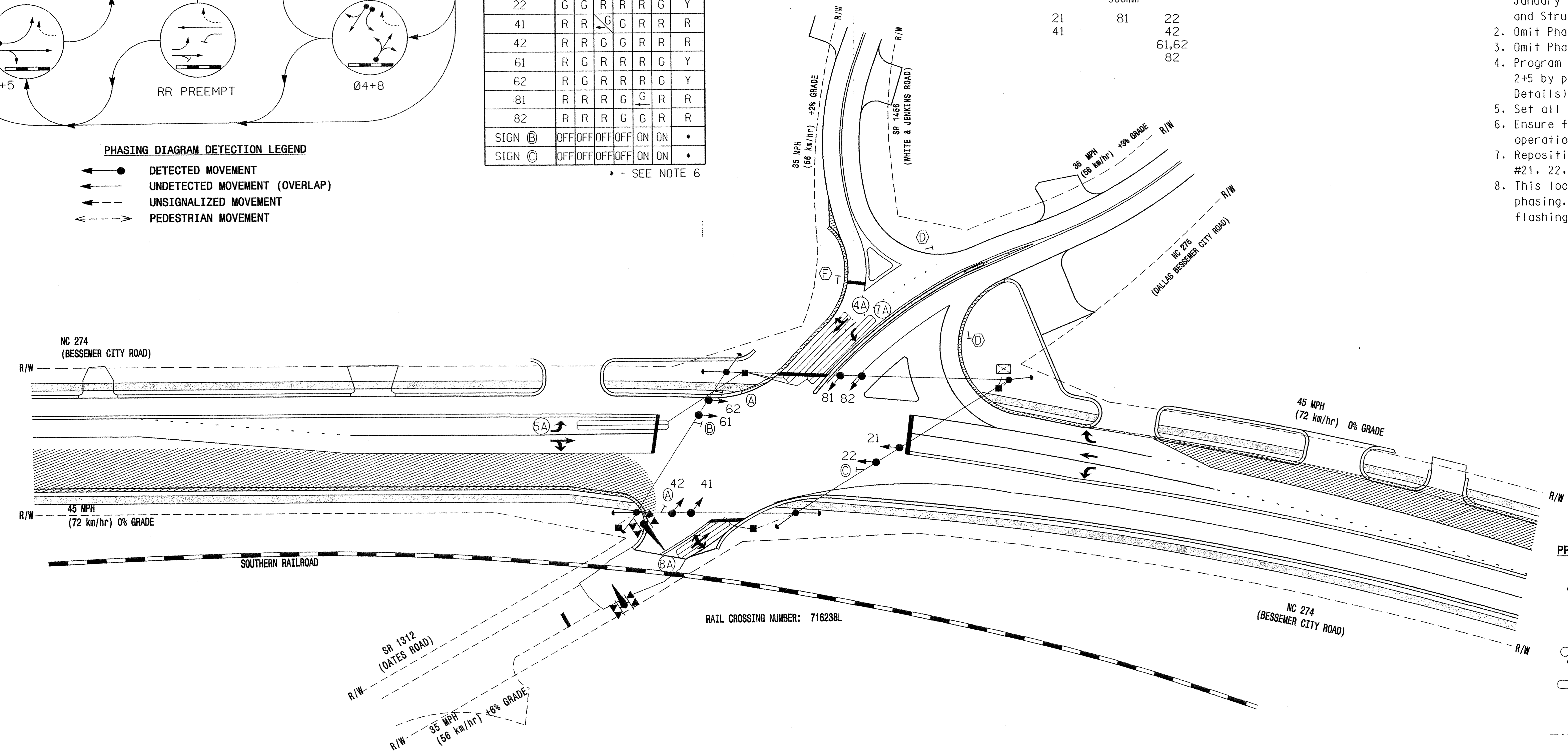
SIGNAL FACE	PHASE							
	02+5	02+6	04+7	04+8	RR CLEAR	RR PREEMPT	FLASH	
21	G	G	R	R	R	G	Y	
22	G	G	R	R	R	G	Y	
41	R	R	G	G	R	R	R	
42	R	R	G	G	R	R	R	
61	R	G	R	R	R	G	Y	
62	R	G	R	R	R	G	Y	
81	R	R	R	G	R	R	R	
82	R	R	R	G	R	R	R	
SIGN B	OFF	OFF	OFF	OFF	ON	ON	*	
SIGN C	OFF	OFF	OFF	OFF	ON	ON	*	

\* - SEE NOTE 6



**PHASING DIAGRAM DETECTION LEGEND**

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



PROPOSED	LEGEND	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	○
○	Right of Way with Marker	○
○	Directional Arrow	○
○	Pavement Marking Arrow	○
○	Railroad Gate and Flasher	○
○	Railroad Tracks	○
○	"NO TURN ON RED" Sign (R10-11A)	○
○	"NO LEFT TURN - TRAIN" LED Blankout Sign	○
○	"NO RIGHT TURN - TRAIN" LED Blankout Sign	○
○	"YIELD" Sign (R1-2)	○
○	Construction Zone	○

**2070L TIMING CHART**

FEATURE	PHASE					
	2	4	5	6	7	8
Min Green 1*	12	7	7	12	7	7
Extension 1*	0.0	1.0	1.0	0.0	1.0	1.0
Max Green 1*	45	20	15	45	15	20
Yellow Clearance	4.7	4.0	4.0	4.7	4.0	4.0
Red Clearance	2.5	2.0	2.5	2.5	1.0	2.0
Walk 1*	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-
Seconds Per Actuation*	-	-	-	-	-	-
Max Variable Initial*	-	-	-	-	-	-
Time Before Reduction*	-	-	-	-	-	-
Time To Reduce*	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	MAX RECALL	-	-	MAX RECALL	-	-
Vehicle Call Memory	YELLOW	-	-	YELLOW	-	-
Dual Entry	-	ON	-	-	ON	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON

**2070 RAIL PREEMPTION**

Interval 1 - Track Clearance Green	18
Interval 1 - Track Clearance Yellow	4.0
Interval 1 - Track Clearance Red	2.0
Interval 2 - Dwell Green	255
Interval 2 - Dwell Yellow	0.0*
Interval 2 - Dwell Red	0.0*
Interval 5 - Exit Green	0
Interval 5 - Exit Yellow	0.0*
Interval 5 - Exit Red	0.0*
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	4.7
Red Clear Before Pre	2.5
Dwell Min Time	10
Ped Clear Through Yellow	N

**2070L LOOP & DETECTOR INSTALLATION**

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
4A	1.8 X 18	2-4-2	+1	Y	4	Y	Y	-	-	-	10	-
5A	1.8 X 18	2-4-2	+2	Y	5	Y	Y	-	-	-	15	-
7A	1.8 X 18	2-4-2	+1	Y	7	Y	Y	-	-	-	15	-
8A	1.8 X 12	2-4-2	0	Y	8	Y	Y	-	-	-	10	-

**SIGNAL UPGRADE - TEMPORARY DESIGN 3**

Prepared in the Office of:  
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 Raleigh, North Carolina 27609

NC 274 (BESSEMER CITY ROAD) AT NC 275 (DALLAS-BESSEMER CITY ROAD) AND SR 1312 (OATES ROAD)  
 DIVISION 12 GASTON COUNTY GASTONIA  
 PLAN DATE: OCT. 30, 2003 REVIEWED BY: R. DUBNICKA, P.E.  
 PREPARED BY: RGL REVIEWED BY:  
 SCALE 1:500  
 REVISIONS: INIT. DATE  
 SEAL: PROFESSIONAL ENGINEER, STATE OF NORTH CAROLINA, SEAL 027742, ENGINEER ROBERT DUBNICKA  
 SIGNATURE: [Signature] DATE: 8-9-04  
 SIG. INVENTORY NO. 12-001273

09-AUG-2004 12:28 2070L001.dwg 2070L001.dwg

\* 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.

\* Clearance time defaults to time used for phase during normal operation.